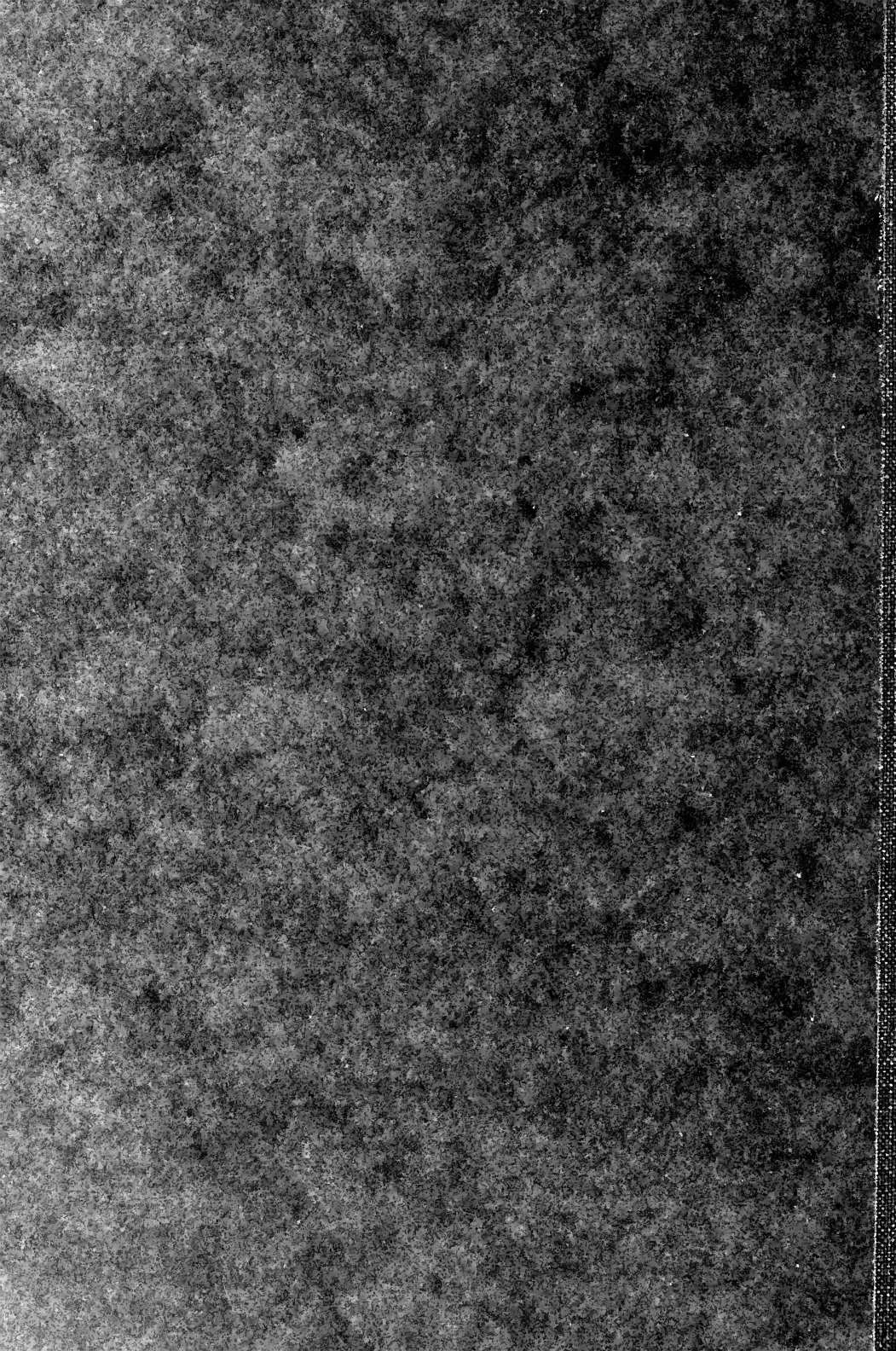


UC-NRLF



B 4 147 228

UCB







The University of Chicago  
FOUNDED BY JOHN D. ROCKEFELLER

# THE PSYCHOLOGY OF MEANING

A DISSERTATION

SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL OF ARTS  
AND LITERATURE, IN CANDIDACY FOR THE DEGREE  
OF DOCTOR OF PHILOSOPHY

(DEPARTMENT OF PHILOSOPHY)

---

BY  
KATE GORDON

---



CHICAGO  
1903

BF 778

G6

~~BIOLOGY~~  
~~LIBRARY~~

EDUC.  
PSYCH.  
LIBRARY

## CONTENTS

|   | PAGE |
|---|------|
| INTRODUCTION - - - - -                                  | 5    |
| THE PSYCHOLOGICAL INTERPRETATION OF VALUE - - - - -     | 32   |
| I. Meaning from the Point of View of Activity - - - - - | 39   |
| II. Meaning in Terms of Discrimination - - - - -        | 49   |
| III. Meaning as Developed in Representation - - - - -   | 66   |
| IV. Meaning under the Experimental Method - - - - -     | 74   |







## INTRODUCTION

A SCIENTIFIC statement is the translation of current general notions about a subject-matter into the language and conceptions characteristic of the science in question. What, then, is the current general notion of meaning? The group of facts which, as a psychological appearance, finds its most apt designation in the subjective category *meaning* we recognize as objective *values* under the diverse forms of Worth in economics, the Good in ethics, in logic the True, and in æsthetics the Beautiful. We shall find that only the normative or projective disciplines—those which reckon specifically with personality as a legitimate control—have contributed any very considerable doctrine on value. In view of these observations our first question is: What is the common non-psychological conception of value which such sciences unite to afford?<sup>1</sup>

*Economic value.*—Value is defined by A. T. Hadley as "An estimate of what a price ought to be. The word value is used in a number of different meanings, but this idea of a permanent standard or cause of price, as distinguished from a temporary or accidental phenomenon, lies at the basis of them all."<sup>2</sup> Economic theories of value may be classed into two chief divisions, represented respectively by the English and the Austrians. The early English school, as developed by Smith and Ricardo, has become identified, whether justifiably or not, with the view which lays greatest emphasis upon the analysis of supply or the cost of production as the determinant of value; whereas the Austrian writers, together with Jevons, have paid special attention to the influence upon value of utility. This feeling of the former school for the importance of cost as a standard may be followed in a few brief citations.

Adam Smith made a distinction of value in use (utility) from

<sup>1</sup>In the following brief discussions of the economic, the æsthetic, the logical, the ethical, and the metaphysical views of value, there is, of course, no attempt at an exhaustive criticism of all current view-points, but merely an outline, in each case, of what seems to me an acceptable view-point. Neither is there any extended list of references to other writers. Many eminent names, therefore, have not been mentioned, for the reason that the citations are made with a view rather to point the moral than to adorn the tale.

<sup>2</sup> BALDWIN'S *Philosophical Dictionary*, on "Value."

value in exchange, and maintained that only exchange value was the proper subject of economic theory.<sup>3</sup> The group of early economists which Smith represents pointed by a familiar illustration to the fact that the "free gifts of nature" which have a great utility can command nothing in exchange. Water, they said, has high value in use, but it cannot be sold for a price; because it is unlimited, it has no value in exchange. Diamonds, on the other hand, have no utility, but because of their scarcity they have a high power in exchange. It was the external or objective limit which struck them as the really coercive factor, and it is significant to recall that they regarded it as an instance of divine goodness—and in no wise due to the operation of previous human demand and effort—that the greatest necessities of life should be the cheapest or the most easily available; it is through God's bounty that we are able to get bread and water more cheaply than diamonds. John Stuart Mill formulated his theory of value under a like inspiration. He posited utility as one limit of value, but gave the most of his attention to a discussion of the other limit which is imposed by the difficulty of attainment of any good. Mill and his followers seem to have taken it for granted that desire and utility are relatively simple, constant factors, not in need of discussion.

Ricardo says: "If any one commodity could be found which now and at all times required precisely the same quantity of labor to produce it, that commodity would be of an unvarying value."<sup>4</sup> Also: "Possessing utility commodities derive their exchange value from two sources: from their scarcity, and from the quantity of labor required to obtain them."<sup>5</sup> Thus Ricardo like Mill appears to have taken utility as a factor whose law is self-evident, and to have employed himself almost exclusively upon the elucidation of the other determinant. It is to be remarked, however, that both Mill and Ricardo, in bringing forward the element of labor as the expression of the limiting factor which regulates value, have taken a step toward the translation of pure objective scarcity into terms of subjective estimate, *i. e.*, sacrifice or disutility of labor. The extreme of the above view—championed by Karl Marx—states that the natural value of things consists solely in the labor put upon them.

The correlative view brought forward by the Austrians may be put as follows: The fundamental observation on value is that it

<sup>3</sup>*Wealth of Nations*, Book I, chap. 4.

<sup>4</sup>*Political Economy*, chap. I, sec. 11.

<sup>5</sup>*Ibid.*, sec. 3.

is to be defined as the object of human desire, or as that which "avails toward life." From the outset there is a recognition that the "emergence" of value is conditioned by the scarcity of goods or by some obstacle to the satisfaction of want. But in contrast with the English writers, who would make value vary precisely with the stringency of this limit, the Austrians maintain that the strength of the organic craving is a more legitimate measure of value. When, for illustration, the craving is strong, a slight stricture is quickly felt and value appears; but where the desire is slight, there is no consciousness of value at all until supply is quite considerably diminished. To quote from Smart:

Now if, in any class of goods, the supply is not sufficient to meet this demand for satisfaction (either as regards the individual or the community), some want goes unsatisfied; the painful feeling of emptiness points to some good or other as the condition of a certain well-being; the relation of dependence between person and thing is established, and value emerges. If, on the other hand, the supply of any class of goods is so great that every demand is met, and yet there is such a surplus that no ordinary waste will cause scarcity, then no want goes unsatisfied, and value does not emerge. . . . In short, the center of value is within us.<sup>6</sup>

Again:

The value of a stock of similar goods is the value of the marginal good multiplied by the number of goods in the stock;<sup>7</sup>

for:

When the quantity of any good produced is increased, the good is put to lower levels of use; the last want supplied determines the last satisfaction; and this last satisfaction determines the value of all the stock.<sup>8</sup>

To summarize: We must conclude with Marshall, concerning the controversy whether "cost of production" or "utility" governs value, that "we might as reasonably dispute whether it is the upper or the under blade of a pair of scissors that cuts a piece of paper."<sup>9</sup> The general formula of demand and supply is developed in more detail by the theory of marginal utilities, and this, philosophically expressed, means that certain objects are designed to meet the demands of habit (*i. e.*, they have utility), and that the interruption or denial of a habit is the occasion of a conscious valuation of that object; hence the ungratified want, which will of course be the

<sup>6</sup>*Introduction to Theory of Value*, chap. 3, p. 16.

<sup>7</sup>*Ibid.*, chap. 5, p. 32.

<sup>8</sup>*Ibid.*, p. 33.

<sup>9</sup>*Principles of Economics*, Book V, chap. 3, par. 7.

least important want, measures the degree of importance which we attach to the object. When we say that supply has decreased or demand has increased, we are also saying that ungratified want has become more urgent. If we could fancy that there were just one habit in the world, then the value of its object would be either infinity or zero, according as the habit were checked or unchecked but the existence of a plurality of habits and wants makes possible the appearance of a "marginal" want, and the possibility of ascribing to goods various values according to the amount or number of other goods which will be sacrificed for them. Value, then, is an estimate, or equation. In the phrase of von Wieser, it is the "calculation-form of utility." It is a ratio in which the denominator is the area of gratified want and the numerator is the field of ungratified desire.

*Æsthetic value* must depend for its placing upon the definition of beauty. Says Bosanquet:

Among the ancients the fundamental theory of the beautiful was connected with the notions of rhythm, symmetry, harmony of parts; in short with the general formula of unity in variety. Among the moderns we find that more emphasis is laid on the idea of significance, expressiveness, the utterance of all that life contains; in general, that is to say, on the conception of the characteristic.<sup>10</sup>

Spencer and Grant Allen agree substantially in the formula of the latter which reads:

The æsthetically beautiful is that which affords the Maximum of Stimulation with the Minimum of Fatigue or Waste, in processes not directly connected with vital functions.<sup>11</sup>

Santayana tells us that the science of beauty is concerned with perception or susceptibility, but also with a critical attitude toward its subject-matter; hence that æsthetics deals with the "sphere of critical or appreciative perception."<sup>12</sup>

Another definition of beauty suggests itself which offers some promise as a harmonizing formula for several difficult facts. According to this definition, beauty is that which unexpectedly offers a secondary or auxiliary stimulus to any act. In order to develop this point of view, let us first see what the facts are which suggest

<sup>10</sup>*History of Æsthetic*, chap. 1, sec. 3.

<sup>11</sup>*Physiological Æsthetics*, chap. 3, sec. 3.

<sup>12</sup>*The Sense of Beauty*, Part I, sec. 1, p. 16.

it, and then try whether the salient points in other æsthetic theories may not be taken care of under this formula as well.

The dispute concerning the connection of beauty with utility has reached the point where it would seem that only the unadvised could venture to speak without the backing of extended research. Nevertheless, the following points are once more presented:

1. Very many undeniably æsthetic experiences do serve utilitarian purposes. Examples are the work-songs and battle-chants of savage tribes, the part played by rhythm in facilitating work as demonstrated in recent experimentation, and the moral discipline and regeneration which are effected by some music.

2. Standards of beauty are changed both for the individual and for the race in the working out of practical adjustments. Fechner<sup>13</sup> points out, for example, the influence on taste of suggestion, association, racial experience, etc.

3. A close connection between the good, the true and the beautiful is indicated in the characterization of the good as the bringing together of the ideal and the real, the true as the correspondence of the idea to its object, and of the beautiful as an absorption of the subject in the object. Furthermore, in popular speech we tend to call moral action and apt demonstration beautiful, as well as to say that beauty is right and true in itself.

4. The "detachedness" or "disinterestedness" of æsthetic appreciation is not peculiar to it. As Hirn<sup>14</sup> suggests, there may be an equally devoted self-surrender in the passion for athletic sports, for games of chance, or for scientific research. In any of these cases a person, losing sight of his original motive, may become so absorbed in the immediate process that what was before the means becomes an end in itself. Disinterestedness is an attitude which is not limited to one type, but which may be developed in connection with any activity.

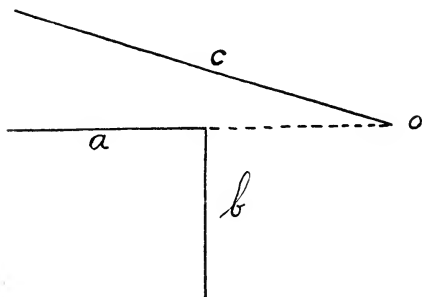
5. Finally, there is the general contention that intense gratification of any sort must point to some preceding state of strife; and to this statement certain cases of æsthetic enjoyment offer an apparent exception. How are we to explain the keen pleasure derived from scenes and colors which we have made no effort to see, and which are as much "given" as anything can be to our consciousness?

<sup>13</sup>*Vorschule der Aesthetik*, Vol. I, chap. 18.

<sup>14</sup>*Origins of Art*, p. 19; cf. also GROOS. *Die Spiele der Menschen*, p. 508.

In view of the above facts and problems, the conclusion seems forced upon us that the beautiful and the useful, although in no sense identical, must yet be in some very close relationship. To return to our previous formulation, then, the beautiful may be said to be directed toward a utilitarian end, but not purposefully sought as a means to that end. It is in the nature of a gratuitous contribution, an unexpected, indirect assistance. It is a sudden accessory in the resolution of a struggle. The beautiful differs from the useful in that it is not the original or essential stimulus to a reaction, but is secondary. It presupposes some practical—*i. e.*, moral—crisis, in which the inadequacy of the stimulus is being made up with effort. The assumption is that the object really could be attained by the painful exertion, but that by an apparent accident it is suddenly made easy of attainment. This sudden increment in the stimulation, this access of fresh power, is what gives us that sense of ease and mastery or poise which is so characteristic of æsthetic enjoyment.

To put this in physiological terms, let us say that an impulse *a* is moving in the direction of the object *o*, when it is checked by



impulse *b*. The current *a*, being dammed up, will overflow into the surrounding area, or at least back up in its own channel, seeking for another outlet; and if there has been some past line of discharge *c* into *o*, the impulse may suddenly strike the old trail and be precipitated into *o*.

Here I should say that the facility of the adjustment would be the criterion of an æsthetic situation: if the old habit were soon found—*i. e.*, struck into by a short-cut and followed down without resistance—the experience would be æsthetic; but if there were a long delay, and the two opposing lines of excitation were obliged to worry out a new path, then the experience would be merely practical. The æsthetic consciousness in the former case would depend for its intensity upon the number and the depth of such by-paths.

In illustration of such æsthetic experience we may cite the following: In the successful drama action becomes more con-

densed toward the end of the play, and interest is keenest when an unexpected dénouement is brought out in a quick succession of varied events. Again, in listening to the performance of a musical composition the emotional reaction is usually greatest when one suddenly finds himself caught up and swept along in the final movement. If Livingstone, penetrating the African forests, had one day come upon a smooth, broad highway, his first apprehension of it would have been æsthetic. Alcoholic stimulation is probably at first distinctly æsthetic; but when its results are foreseen and used for specific purposes, it becomes purely utilitarian. When the runner first learns his form, he discovers within himself a host of unsuspected allies—the better adjusted tread, the lift in the chest and arms, are a revelation to him; then, as he swings down the track, the consciousness of all of himself working together, which these tributary forces give, is a consciousness of beauty, and his exultant thrill is a pleasure which should be called æsthetic. To the person whose daily routine does not involve physical exertion the gymnasium offers as many æsthetic possibilities as the art gallery does.<sup>15</sup>

<sup>15</sup>The formula given in the preceding paragraphs is, in some respects, very like the theory of beauty put forward by Guyau; in other respects it differs. Guyau writes (*Les problèmes de l'esthétique contemporaine*, chap. 6, p. 61): "Pour nous, nous croyons que toute sensation agréable, quelle qu'elle soit, et lorsqu'elle n'est pas par sa nature même liée à des associations répugnantes, peut revêtir un caractère esthétique en acquérant un certain degré d'intensité, de retentissement dans la conscience." And in chap. 6, pp. 72, 73: "Si toute sensation peut avoir un caractère esthétique, quand et comment acquiert-elle ce caractère?—C'est là, nous l'avons déjà dit, une simple affaire de degré, et il ne faut pas demander des définitions du beau trop étroites, . . . Il faut dire aux adorateurs du beau ce que Diderot disait aux religions exclusives: Elargissez votre Dieu.

"Toute sensation, croyons-nous, passe ou peut passer par trois moments: dans le premier l'être sentant constate en lui-même ce que nous appellerons avec M. Spencer un *choc* léger ou violent; il distingue plus ou moins vaguement l'intensité et la qualité spécifique de l'impression, mais rien de plus: . . . Dans le second moment la sensation se précise et prend, s'il y a lieu, un caractère clairement douloureux ou agréable . . . il survient un troisième moment, appelé par l'école anglaise la diffusion nerveuse: la sensation s'élargissant comme une onde, excite sympathétiquement tout le système nerveux, éveille par association ou suggestion une foule de sentiments et de pensées complémentaires, en un mot envahit la conscience entière. A cet instant la sensation . . . tend à devenir esthétique ou antiesthétique. L'émotion esthétique nous semble ainsi consister essentiellement dans un élargissement, dans une sorte de résonance de la sensation à travers tout notre être, surtout notre intelligence et notre volonté."

I should agree entirely that any sense department *may* furnish æsthetic

One other class of cases needs special mention—the pleasure we get from things seen or heard when our whole attitude is one of dreamful ease and no special desire for anything can be discovered. Such pleasure, I take it, is conditioned by the agreement of the object with the observer's mood, the mood standing for a highly generalized desire (or for the desire for a highly generalized object). Suppose that what we desire is excitement of any sort at all—this is a wish so general as to be no more than a mood—and we are suddenly confronted with masses of light and of brilliant color, the reaction would be tremendous simply because the experience would give unexpected point and definition to what we had been feeling.

These, then, are the characteristics of æsthetic experience—that it is unforeseen, secondary in its use, and that it is the revival of old habits and hence of emotional complexes. Let us see how they agree with certain accepted observations on the appreciation of the beautiful. As Kant delivers, and many confirm, a distinctive mark of æsthetic pleasure is its disinterestedness or detachedness from utilitarian ends; it is a thing apart and has an intrinsic worth. The partial truth in this statement is adequately recognized in the remark that æsthetic experience comes unlooked for and unsought, and aside from the direct line of stimulation. The æsthetic attitude, as contemplative or as presenting the absorption of the subject in the object, may be expressed as the resolution of any active striving; such absorption takes place at the end of any adjustment and is the signal of its completion. The observation that we do not desire to possess the thing which we admire may be answered by saying that in the enjoyment of the object—*i. e.*, in the solution of our problem—we are already in full possession of it. The definition of Grant Allen of the beautiful as that which affords

experience, and that the depth of æsthetic emotion is to be measured by the amount of resonance or accompanying reverberation; but I should still insist—as Guyau does not—that these associations must come as unexpected stimuli. The element of novelty seems to me essential: an æsthetic experience is necessarily made up of familiar elements, but when the combination, too, becomes familiar, the experience loses its æsthetic character. This point is expressed by PROFESSOR WARNER FITE in the terms of a theory of the relations of "Art, Industry and Science" (*Psychological Review*, Vol. VIII, p. 143): "So far as the element in question is new, unexplored and uncontrolled, it is an object of esthetic appreciation and the demand for it is an esthetic want; in proportion as it comes under our control it becomes an organic need, an object of industrial activity and a fact of science."



"the maximum of stimulation with the minimum of fatigue or waste, etc.," is something similar to the formula of accessory stimulation; only it does not point out specifically how the increase in stimulation may decrease the waste, nor does it express the "given" nature of beauty.

Santayana contrasts moral and æsthetic values in these words: "One factor of this distinction is that while æsthetic judgments are mainly positive, that is, perceptions of good, moral judgments are mainly and fundamentally negative, or perceptions of evil."<sup>16</sup> In agreement with this is the remark made above, that the moral end probably could have been reached independently of æsthetic aid, and that such assistance was to be counted pure gain, and not merely the eking out of a deficiency.

The appreciation of beauty represents unity in variety, if there be some purpose as the unifying factor, which is attained with the assistance of various collateral pathways, and it consists in the consciousness of the characteristic or expression in that the original instigation to action is a stimulus which stirs up a complex of old habits or is a symbol which points to a rich emotional context. Æsthetic value is to be expressed in terms of emotional reference; it is a function of the number and intensity of these secondary excitations.

*The logical view.*—Logical inquiry, which concerns itself with descriptions and explanations of judgment, inference, or reason, which seeks for its object certainty and truth, and which erects systems of prescriptions wherewith to attain to a correspondence between the real and the ideal, must formulate value within that circle of categories.

Speaking generally, we may say that the function of judgment is definition. In the syllogistic logic of Aristotle the act of judging appears as the inclusion of an object within a class—an idea probably derived from the dictum of Socrates and of Plato that true knowledge is knowledge through concepts or knowledge of universals, and an idea not foreign to Kant's definition of judgment as "the faculty of thinking the particular as contained under the universal."<sup>17</sup> According to this conception we define an object by the universals under which we range it. Modern logic, emphasizing the inductive aspect of the inferential act, points out that the universal is defined by the objects which are subsumed. Jevons, in perhaps

<sup>16</sup>*The Sense of Beauty*, Part I, sec. 3.

<sup>17</sup>*Critique of Judgment*, IV, 185.

the most salient feature of his logic, expresses the act of judgment, not as the subsumption of a thing under a class, but as the "substitution of similars." This conception, together with Boole's introduction into modern logic of the quantified predicate, makes us regard the reasoning process as a balancing of equivalents or a finding of identities, and gives to every proposition something of the character of an equation. Substitution suggests also the symbolic function of the logical act. Keeping in mind Bradley's<sup>18</sup> strictures upon Jevons, that the equation, namely, is not merely an identity, but also an implication of a difference, and that in a substitution the substitute is not simply identical with the thing it displaces (else, why the change?), we can see that in the balancing of equivalents or the substituting of similars there is a real definition taking place. For not only is an identity declared which subsumes the subject under some class-concept, but the subject itself is a differentiated particular which extends the realm of the predicated concept, so that the two sides of the equation, or the subject and predicate, mutually define one another. In naming definition, therefore, as the characteristic function of judgment we take cognizance of the fact that the subject of our judgment is being delimited, determined, or defined by its predicates, not only in the sense that it is being included in certain classes, but also in the sense that it is being equated with the sum of its predicates.

The task of logic, then, is to investigate the conditions of definition or of precision. "The postulate of logic," says Ueberweg, is "to state explicitly what is thought implicitly."<sup>19</sup> Now, according to one point of view, such a statement will consist in the reduction of phenomena, or the expression of experience in categories of degree, quantity, space, time. Number is the criterion of exactitude, and measurement the ideal explanation. Evidence of this fact is the tendency of all scientific theory in the direction of mathematical formulations; witness the precision of physiological psychology in seeking to localize mental functions; the attempt of atomic theories to translate all qualitative appearances into terms of quantity, *i. e.*, into spatial and temporal determinations; the criticisms passed on John Stuart Mill in ethical writings for his admission of different *kinds* of pleasure into utilitarian theory; the tendency to express our hopes and fears in the mathematical formulæ of probability and

<sup>18</sup>*Principles of Logic*, Book II, chap. 4.

<sup>19</sup>*System of Logic*, Appendix A, p. 562.

chance—the amount that one will wager is frequently considered the most accurate gauge of his frame of mind on a given point. Things, indeed, are commensurable, or comparable in the strictest sense, only when they have been reduced to a common denominator; *i. e.*, when they are the same in kind and preserve only a purely formal or numerical difference. Our goal is reached when we can apply a given unit to every aspect of the whole, when we have found the numerical relationship of the unit to the whole. The unit is a symbol, and, whatever content we put into it, we still have a determinate result; for the value of the whole is a function of this primary or unitary value.

The whole point of any quantitative statement lies, of course, in its symbolic possibilities. As was hinted above, values and symbols emerge simultaneously within the purpose of a facile manipulation of materials. It is only when we wish to exchange or deal with goods that we consciously evaluate them, and then we translate them into their common denominator of money and credit symbols. The emergence of value in correlation with the development of symbols is the short cut whereby past experience is appropriated for the guidance of future activity. The more abstracted the concept—*i. e.*, the lighter and less cumbrous the symbol—the better will be our mental economy; *i. e.*, the more rational and logical our procedure. The nearer, therefore, that we approach to a numerical statement of phenomena or to the “pure form of difference,” the closer we come to a perfectly free and universal substitutability of similars.

According to the numerical formulation of value, interest must become purely extrinsic and quantitative in character, value meaning amount—the *more* the *better*. The most ultimate logical problem was phrased by the Greeks as the relation of the Many to the One. As I conceive it, the “One” is the thing, fact, or subject to be valued, and the “Many” is the sum of the parts or determinations of the fact which constitute its significance or meaning. Each *one* in this many may be the central one which has value only as it implies all the other *ones*, so that, while the thing valued is one, the value of it is always in numbers—in the many. Now, from such a viewpoint as this, the value sometimes called intrinsic becomes a consideration of mere prejudice, whim, or chance, and choice finds its reason or ground wholly outside the object of choice. Thus, if the necessity arises of choosing between two things which are exactly

equal (a supposition which is possible only from this mathematical standpoint), there being no ground for a real preference, we should say that the outcome was blind or fortuitous. But we must remember that, although there may be no intrinsic worth in the one object above the other, yet there is an intrinsic necessity in the situation for a choice of some sort. Consciousness must be selective in order to preserve its integrity; we must decide—must make or force a choice for the sake of having any unity, and so any value at all. Logically, then, the function of choice is not the selection of any object by reason of its peculiar character, but it is rather the actualizing of the relation of the many in one: choice serves to give a *locus* for the one, or to evolve the relation of many in one out of a situation not previously susceptible of numerical expression.

We may illustrate the point by showing the result of a change in emphasis in such a sentence as this: "The snow is white." If we regard the subject and predicate of any proposition as having the relation of species and genus, then it is apparent that what takes place in every act of predication is an analysis of the subject and its classification under some more comprehensive category. The subject is the substance of our thought; it is the given matrix; and the predicate is a mode of conceiving that substance; it is a conceptual phase of it, or a separation out of an element or attribute. By a series of predications about an object we build up a meaning for it, so that finally the unanalyzed lump called substance becomes an articulated object stated in terms of its functions and attributes. Let us first say, now, that "the snow is *white*." Here the emphasis is on the "white," which is the one attribute we are thinking about, and the snow is conceived as the subject or substance of our judgment, which embraces many other attributes. Suppose, however, that we say: "The *snow* is white;" we then regard the snow as one, as a single thing among others which are white; but the white is now the virtual subject of our reflection; it is a class which includes many members. Thus, according to our choice or emphasis, the snow may be considered as either the one or the many.

The subjective appreciation of logical validity we call conviction or certainty, and the process of inference from this view-point is the means whereby we assure ourselves of a proposed conclusion. It has become common to believe that conclusions are reached, not by two different modes of reasoning—the deductive and the inductive

— but by a single process within which we may distinguish two such phases. No one could pretend that either the deductive or the inductive syllogism is more than an artificial and schematic expression. In the deductive syllogism we have the major premise standing first, but in actual reasoning we never start in that way. We do not burst forth suddenly with general propositions and then find ourselves confronted with some novel conclusion. Our actual procedure is literally a logical inquiry; our first question is: "What is that?" which is to ask: "Under which concept is this special percept to be mustered?" Our next question proposes an hypothesis: "Can  $A$  be  $C$ ?" Can  $A$  be conceived of as  $C$  and substituted for it? Thus the first step is to formulate some conclusion in the interrogative. The final step is to say: "Yes, this is true, because so-and-so." By virtue of some common or mediating term we bridge over our doubt. The value of this logical conclusion and the meaning of the subjective feeling of certainty rest upon the office of the middle term—it mediates the conclusion. In the case of inductive inference, on the other hand, we never start with a mere collection of particular instances; there is always something first to suggest to us to get that special kind of particulars. These would not, indeed, be particulars at all unless we had some purpose in collecting them, some tentative classification to guide our selection of material. So that here again we begin with an inquiry whether such and such a thing is true; and our middle term or mediating concept this time is constituted by the sum of all the evidences we can amass. The ground of our inference is this array of instances.

Now, the sufficiency of any reason, or the adequacy of any ground to give us certainty, is measured by the degree of inward satisfaction which it occasions. As Sigwart has said: the criterion of objective necessity is the inward feeling of certainty.<sup>20</sup> "Belief in the truth of this feeling and in its trustworthiness is the last anchorage of all certainty." The relation of this feeling of certainty as the criterion of validity and the view which makes value rest in numbers is just this; the feeling is the cumulative effect of the many pieces of evidence. In the deductive syllogism we may seem at first sight to be basing our faith upon the force of a single reflection; *i. e.*, the office of the middle term; but we must remember that our trust in the conclusion rests really upon the sureness of our major and minor premise, each of which must have been verified by many observations

<sup>20</sup>*Logic*, Introduction, p. 15.



in the past. Moreover, although we may assent to a conclusion by reason of only one consideration, yet it is undeniable that, if we can find other reasons for the conclusion, our certainty is thereby reinforced; and if the issue is vital, we are never loath to make assurance double sure. With the inductive syllogism we have clearly a case in which the safety of the conclusion rests in the amount of the evidence.

We have said that the function of judgment is definition, explication, or the development of the relation of the many in one; and, further, that the subjective criterion of successful definition is certainty or conviction, and the conception which completes the harmony of these two is the objective necessity or truth of the judgment—the correspondence in it of the ideal and the real. In answer to the question as to how we know when we have a correspondence of idea to fact, Ueberweg says<sup>21</sup> (in substance) that in “external perception” we never can have absolute material truth, because we can only compare our own conceptions with our own conceptions, and never our conceptions of reality with reality itself; whereas in “internal perception,” or the perception of our own psychical states, we may have absolute material truth, since we have the reality of these perceptions within ourselves. This is a distinction, however, which is hard to maintain; since in the comparison of psychical states we either have two things in consciousness simultaneously, in which case there can be, properly speaking, no comparison, but only an immediate awareness of something which we may later analyze into two things; or else, if the two originals are not present in the mind at the same time, one of them must appear as the result (whether that be in the form of an image or not we need not say) of past experience, the original of which is quite as inaccessible as any fact of an external world. We shall, I think, be doing justice to Ueberweg’s conception of the remoteness of external reality by saying that the “object” which we are trying to arrive at never is given to reflection, but it is the very nature of reflective thought that it is trying to reach the object. This determination of activity by a purpose is the construction of the object or the defining of the ideal until it becomes the real. We know that things are true because we make them true. It is still possible, of course, in this functional view of the judgment to express the

<sup>21</sup>*System of Logic*, par. 40, pp. 86, 87.

attainment of the object in equational form; *i. e.*, the real = the ideal.

Just here it seems not inappropriate to draw a line between the mathematical and the properly logical statement of the nature of judgment. In mathematics, for example, we may very well say that the real is equal to the ideal, but for consciousness such a conception would carry with it the necessity for the entire cessation of thought. I would suggest as one criterion of difference between logic and mathematics that the things which we may treat in mathematics as equals must be conceived of in logic as merely equivalents. In mathematics we *may* have, and frequently *must* have, perfect qualitative identity with quantitative diversity; but in any science which takes cognizance of the knowing subject we should have to face the fact that a perfect qualitative identity in two modifications of consciousness is a perfect fusion into but one modification. In any activity whatsoever, when we use our symbols, use one thing for another, we are using things which are "as good as" the others for which they stand, have equal effect or valence—are equivalents, but never equals. To illustrate the two standpoints we may take the situation of seeing a dog run. Mathematically expressed: "The dog is running;" or, "The dog = one thing running." There are the dog, the running, and the existence of the dog running; *i. e.*, we have the existence of the situation expressed apart from the differences in content. Logically, on the other hand, we must say: "The dog runs." We have here a situation which, if our purpose be merely to name it, we may call either a dog or a case of running—the two are equivalent for our purpose. In a word, then, we call things equal when we think of them as unconditionally identical, or the same in themselves; but we call those things equivalent which are identical only for some given purpose. Or, in the science of consciousness there can be no quantitative alteration which leaves qualities wholly unchanged.

Our final formulation of logical value is this (each of these statements implying the others): Only that modification of consciousness has much meaning which is objectively determined, which in its nature may approach a numerical precision of expression, which is supported by a mass of evidence or is the nucleus of richly varied detail, and which involves a feeling of conviction.

It needs but a few sentences to show that the logical statement

of value holds good also in ethical theory. In *ethical* doctrine the characteristic guise of value is the ideal, the end, or the Good. The attempts to answer the question, "What constitutes the Good?" group themselves into two chief lines of inquiry. The extreme cases are, respectively, the view which holds that the good is the pure content of desire, defined as the sensation of pleasure—*i. e.*, hedonism; and the view which defines the good as good-will or the pure form of desire. Although hedonism in its cruder forms no longer finds numerous supporters, yet it survives in the type of theory which would regard the connection between means and end as an extraneous relation. Necessity (which remains unexplained in this theory) compels the use of certain means to certain ends. The means and efforts which we must use are entered on the debit side of the account; they must be subtracted from the total sum of satisfactions. Inhibition is elimination or avoidance, rather than subordination. The good is exclusive; it takes in this experience, but not that one. We must, of course, see a certain truth in reckoning the labor and cost of things as loss, but this loss is essential to our appreciation of gain. "The light dove, piercing in her easy flight the air and perceiving its resistance, imagines that flight could be easier still in empty space."<sup>22</sup>

The case which emphasizes the other extreme, that of pure form, is illustrated by the stray remark of Stevenson—that "to journey hopefully is better than to arrive." But between these two there stands a type of theorist who would say that the distinction of means and end is a difference within the good. The good is the form or particular aspect of experience which is realized at any moment by the harmonizing of all the impulses of the previous moment. Progress is a succession of forms, plans, or adjustments, each more comprehensive than the last. The good is "the whole of life in a new rhythm." That conduct is right which best unifies all our impulses, or which brings the greatest number of them into line; that end is good which answers most completely our desire, or which represents the greatest number of them. Thus in hedonism we get our unity in the qualitative homogeneity of the end and our variety in the concept of amount of pleasure or the number of pleasures—a mechanical statement; and on the rationalistic side we find the One in the projected purpose, and the Many in the

<sup>22</sup> Introduction to the *Critique of Pure Reason* (MULLER's translation).





concerned with the attainment of certainty through reason or judgment. There have been those who would say that truth is the goal of the logician, but persuasion or conviction the aim of the orator and rhetorician. To this we should say that the object of the orator or rhetorician is not a state of mind at all, but is rather some special reaction; public leaders wish to persuade men to do things, and would be just as well satisfied if that action were a pure reflex; but the logician does aim to induce a mental state of assurance, certitude, or the secure apprehension of a thing as true. When we are speaking exactly, we do not say that "truth exists," but that "some things are true for some people;" and the object of the reasoner is better expressed, not as "the truth," but as the attainment of certainty, or a frame of mind which may be described as a felt satisfaction in the outcome of reason. We "rest assured" or "feel convinced." In ethics we may say that the "practice" of virtue has as its end the building of character, or the forming of a characteristic or habitual reaction which, when perfected, we call conscience. And, in æsthetics, the last term in the appreciation of the beautiful is the appeal to taste, the problem of the æsthetic consciousness being to show how taste can guide the particular appreciation, and how this, in turn, can modify taste. Thus the object of discursive thought is to attain to intuitive certainty; of moral effort, to secure the more facile guidance of conscience; and of attention to the artistic, to enjoy immediate and unreasoned appreciation. The problems of the normative sciences may, then, be generically formulated in the relation of feeling to thought. Thought is the concept, on the one hand, which stands for judgment, conduct, and appreciation; and feeling is, on the other, the best expression for the gratifications of intuition, conscience, and taste.

This question of ultimate formulation is identical with the question of philosophic method. The application of a philosophic method I conceive to be this, that one takes some general statement, ready-made so to speak, or categorical, and uses it as a mode of conceiving particular cases, to the end that he may see the particular in new phases and gain by this fitting on of the concept some suggestions as to the nature of the particular. If, then, it can be shown that the statement of the metaphysical problem as a relation of feeling to thought performs the same function that statements in other categories do—*i. e.*, if it presents our difficulties in an equally suggestive light—then the characterization of the universe as an

interaction of thought and feeling may stand as the expression of a legitimate philosophic method.

Can the ultimate interpretation of experience be as well formulated in categories of feeling and thought as it has been in other and approved categories, like substance and attribute, possibility and actuality, nature and freedom? Let us first review the significance of what we should now call the physical concept of substance. In early Greek speculation, as well as in our common thought today, the word "substance" calls up the idea of extended matter, or corporeality; it is that which we see, feel, and lift. For the Greeks their external objects had a sufficient ground of being apart from any subject; they were *there* in space, and the mind came to know them by merely bumping into them. The idea was an impression or indentation, so to speak, of the real object upon the mind. The various attempts to introduce harmony into the conception of a world bristling with these independent substances finally culminated in the method of Democritus, which said that all objects were made up of atoms of the same sort, and that, substance being a single quality, all apparent differences were differences in quantity. The atomism of Leucippus and Democritus has practically held good, in its descriptive outline, up to the present day. The physical sciences of our own time state the world as matter and motion; the atom or substance as an exceedingly minute particle, such that it could never become a part of our immediate perceptual experience; and the phenomena of the sensible world as various dispositions of these atoms, or motions of the substance. Substance, as Locke puts it, is the substratum or ground of connection between the qualities of an object. It may be called either the support of these qualities or the limit of differentiation; for the atom, defined as indivisible, limits the divisibility of matter, and so expresses the stopping-place of physical analysis. The conception of substance is now recognized as a methodological assumption, as a symbol which is useful in stating certain facts about the visible, tangible substances of everyday experience. Just here we may mention the recent attempts of physicists to reduce matter itself to terms of motion. It seems impossible to conceive the physical world as a complex of vibrations of different periods without assuming that there is something there vibrating; and if we agree to this as necessary for thought, we must give the same sort of reality to the thing as to its motion. These vibratory motions of the physicist are never any more imme-

diately given in experience, are no more descriptive of the actual impressions we get of things, than is the case with the atoms. There appears no reason, therefore, why the scientist should not either grant to matter as real an existence as he does to motion, or else recognize that both matter and motion are, as he conceives them, convenient symbols, the imagery for which comes from certain actual experiences with gross masses and motions.

Substance has thus been viewed both as the supporter of reality and constitution of all things visible and invisible, and as just a bit of technical apparatus in a special field of inquiry. We must imagine that the connection between these views is to be explained in some such account as this. The very first distinctions of substance and attribute, or of the content and its function, must have been for primitive man the distinction between his own body and the operations of that body. His data were arms and legs, and his problems specific muscular reactions—how to climb that tree, or to bind up his wounded hand. The anthropomorphism of savages, as shown in the physiological metaphors by which they explained or expressed the natural forces about them, seem at least to point that way. When, therefore, early speculators became curious as to the world of things, they tried to put themselves in the place of those things and to fancy how their own muscular equipment would go to work to accomplish certain effects. This imaginary trying on of a situation, or putting one's self in the other's place, plays an important rôle in the working out of very many explanations. We find, accordingly, that in their first crude thinkings people filled the air alive with personal powers. Substances were individuals, and motions the working of whim or will instigated by love and hate. Gradually, however, there was an awakening to the fact of certain unswerving uniformities, and a change of interest took place from the agent whom it seemed unnecessary to propitiate to the effects or results of the agency. The powers of the air became colorless and attenuated, until at length the phenomena which the savage once revered as acts of deity became powers subject to his own prevision and even control; the external entity became entirely dispossessed, or else merely a way of labeling for himself certain influences which he wielded.

The relation of substance to its attributes is one which shifts as scientific investigation proceeds, but it is one which can never be

wholly done away with; that is, neither of the two terms can ever be wholly translated into the other. The concept of substance stands for an element in thought which will always be indispensable to thought. It is the content, the symbol, or the non-rational imagery, the handle by which to take hold and manipulate results or perform functions. In a situation expressed as substance and attributes, substance represents the unexplored, indeterminate part; it stands, at the outset of an inquiry, for our entire universe; but as we discover the functions of our substance and marshal more and more attributes under it, there is a change of emphasis. The content of the original experience becomes more and more meager, until it lapses into insignificance, becomes a merely unrationalized point, so that, so far as any single investigation is concerned, substance is completely translated into attributes. But we have to remember that the results of one analysis become the substance of the next, that the victories of yesterday only make matter for the struggle of today, and that substance is a point of anchorage between two periods of progression—the residuum of unexplored content.

If we have given a just estimate of the function of the concept “substance,” then it is obvious that the meaning of substance and of the feeling of personal identity must be nearly related; for the idea of substance has grown out of a mode of thought—the putting of one’s self in place of the phenomenon to be explained—which involves the notion of a personality as the carrier or supporter of values. And, on the other hand, we can take the modern psychological analysis of the consciousness of self—as given in James, for example—and see that it reduces to a statement of the presence of certain tactual, tendinous, and muscular sensations which represent the common element or invariable accompaniment of our mental life—the substratum or substantial part of it.

The object of the foregoing remarks is to bring out that the consciousness of self, which is an emotion or feeling, answers to the description of substance as homogeneous substratum of experience, and that it fulfils the functions of explanation and of the preservation of problems quite as adequately as the concept of the atom does. Substance and feeling both stand for the unknown in experience, for a fusion of indefinites, or for the path of untried opportunities. If we could imagine mind as having an experience of pure substance, we should have to think of it as a pure affection of mind by external fact—the unmediated excitation of the organism.

Let us now turn to the categories of the possible and the actual. In answer to the question, as Royce puts it, "What is a valid or a determinately possible experience at the moment when it is supposed to be only possible?"<sup>24</sup> we may say, briefly, that the possible is an emotion as contrasted with thought, which is the actual. The assertion that so and so is possible—that it may or can be—is a statement which is primarily concerned with both past and future time; it is something other than present and actual. Aristotle held that the possible or potential was an important but inferior sort of reality; that it lacked the full validity of the actual. Kant gave it a certain real status when he said that it was the business of science to explore the realm of possible experience. Science is a statement of conditions of that which can happen if we essay it. In view of a given problem, let us say, there are several solutions presented as possible, but, in the nature of the case, they are mutually exclusive, since the choice or actualization of one means the inhibition of others. Choice implies the existence of two or more ways of doing the thing; but if these ways exist at the moment of choice and yet are not chosen or actualized, what can be said of them? Feeling is the name we have for the undeveloped realization of a thing; emotion is the experience of the fusion of many incipient reactions which we call the possible avenues of discharge. Feeling is the potential, the repository of undefined, undetermined experience, and the expression for the fact that there are alternatives to the present experience and a chance for variation. It is thus identical with the unformed or homogeneous, the blind, raw datum, or the stuff of possibilities.

The problem at issue in discussions of *nature* and *freedom* is to reconcile the conceptions of mind as being governed and as governing, to explain the relation of the given to the achieved. We ask how it is that we go from the natural or given, which conditions us, to constructive thought, in which the forms of the subject condition the experience. Is it not the same question if we ask how to get from feeling to thought? What is this feeling, this dumb unrational presence, which is there without explaining itself, and which conditions us by compelling recognition; and how are we to think of it as being appropriated and made over into rational experience? When we can answer this, we can also say how freedom is possible under natural law.

<sup>24</sup>*World and Individual*, first series, p. 260.

Suppose, now, that we were warranted in saying that the formulation of the ultimate metaphysical question in the antithesis of thought and feeling does do justice to the historical conceptions under which metaphysical speculation has flourished, what sort of answer would that formulation suggest? How can feeling and thought, if they stand for so fundamental a difference, ever get connected so that they affect one another? How can thought know feeling, or how can feeling feel thought?

Kant teaches that even the objects of inner perception, our own mental states as presented to the psychologist, are merely phenomenal, and that behind them are the real mental objects to which we cannot penetrate. In Schopenhauer the will or motive element is unconditioned and independent of the forms of thought; it constitutes by itself a separate class of objects for the subject.<sup>25</sup> Münsterberg has said in "Psychological Atomism"<sup>26</sup> that feeling and will cannot be in reality subject-matter of psychology, because they cannot take the presentational form, or be submitted to the laws of cognition. Such views are unavoidably skeptical in their bearing; they embody the opinion that mind can never know reality or attain to material truth, because it can compare only its own impressions with its own impressions, and never these impressions with real objects. This opinion involves the assumption, it seems to me, that things which are distinct are necessarily separated, and that different things cannot be predicated of one another—a view which must reduce the universe to an identical proposition.

But if feeling and thinking are related, what can we say of this relation? Every act may be defined either as a mediation of intellect between two emotional states, or as the mediation of emotion between two intellectual states. If we suppose a continuum of pure reflexes, we know that a person will never be jostled out of unconsciousness until there comes some obstacle interfering with a habit. This interruption in the customary channels of discharge is the occasion for emotion. The first throb of consciousness is this felt response which seems to try all the avenues of reaction at once. It is a moment of wonder or surprise, connoting vaguely some such question as, "What is the matter?" and this mental content, which Bain designates as a "neutral excitement,"<sup>27</sup> we may call undiffer-

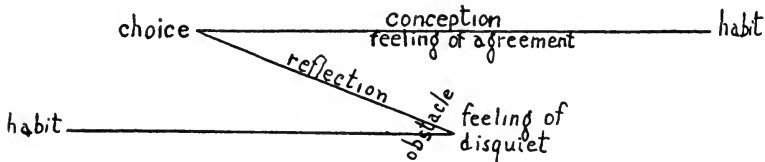
<sup>25</sup>*The Fourfold Root of Principle of Sufficient Reason.*

<sup>26</sup>*Psychological Review*, Vol. VII, p. 1.

<sup>27</sup>*Emotions and Will*, Part I, chap. 1, sec. 13.

entiated response or the primitive, original emotion. This first feeling soon merges into a consciousness of inadequacy of some special sort, and into a desire for the filling up of the break. The emotion holds in solution, so to speak, several possibilities of action, and it is the selection and development of one of these which constitutes the mediation of intelligence. Out of the affective state of disquiet there follows a reflective perception and a projective conception.

In so far as consciousness is held up and bent back, it is immediately perceptual; it takes an inventory of the situation and sees what the trouble or what the obstacle is; and in so far as it selects from these elements in the situation—declares an identity of self



with one of the possibilities of reaction—it is projective and conceptional. This identification of self with the successful reaction is marked by the feeling of agreeableness or satisfaction which is the final moment in the adjustment. There is, in every activity, a reversal of control between feeling and thought, or stimulus and reaction; for in the first moment of the act we are stopped by an obstacle of which we must take account—a submission of the subject to the object; but we then choose or determine, after reflection, what the final stimulus shall be—a conditioning of the object by the subject. Thus we get from one state of feeling to another, from the painful to the pleasant, through the mediation of intellect. It is equally true, on the other side, however, that we cannot advance from one intellectual occupation to another without the intervention of feeling. We should be hopelessly swamped in details—could never, in fact, escape from one analysis to the next—unless we had some ability to lump or fuse our past analyses into a feeling for things, and, with emotion as the carrier or symbol for whole trains of ideas, shake ourselves free for the new object of attention. One way, therefore, in which feeling and thought are related is in the mutual service of means to ends.

Is there any other way in which emotion can be thought?



Definitions of emotion usually maintain that it must be regarded as the conscious concomitant of complex physiological modifications. The checking of an instinctive reaction provokes a confusion of tendencies, and the emotion is the fusion of these organic registrations or the simultaneous awareness of a manifold of organic movements. The essential point is that of the *many motions*. Going on now to a definition of movement, or motion, we should agree that it is to be thought of in terms of certain relations of space and time, space and time being defined in their turn by means of quantitative formulæ or numerical symbols. Thus thought may think its Other as a manifold—number or pure difference being the most abstract form of thought. Feeling, on the contrary, takes no account of space or time or number; the “form” of feeling (unless that be a contradiction in terms) is pure quality; whatever is felt is felt as a quality; or perhaps it is better to say that whatever is felt is a quality. At the risk of seeming to set up feeling and thought as things-in-themselves, we shall nevertheless try to make the above distinction more explicit. Feeling taken by itself is pure quality; *i. e.*, a feeling is homogeneous—has no inner complexities; but feeling as apprehended in thought is a multitude of unique entities. We cannot say just how each one differs from all the rest; but for thought they are always feelings, not feeling, and each one seems to be distinctive. Thought in itself is a complex or a set of distinguished parts; but thought as grasped by feeling is a mere undetermined sort of awareness or neutral excitement. We feel thought by means of symbols which themselves are purely qualitative.

What, finally, is the bearing of these preceding discussions on the theory of value? According to the metaphysical view of it, thought has value as it mediates feeling, and feeling has value as it mediates thought. Value exists by virtue of the fact of reference. A perfectly independent thing could have no value. An identical proposition has no internal value, because it involves no substitution, no symbolism, no reference; it is an equation with no distinction of subject and predicate. The actual has meaning only because of the possibilities which it represents; the present is significant only because of past and future; and possibilities have value only as there is an actuality. Quality would have no value did it not exist in some quantity, and mere quantity, without quality, is nothing.

*Summary.*—Summarizing the various accounts of value, we say



(1) in economics that a commodity has worth when it is much in demand, but limited in supply. Value emerges when a habit is checked, or when want comes to consciousness, and is measured by the ratio of what is wanted divided by what can be had. (2) In logic the existence of value depends upon the various distinctions of thought and its object, subject and predicate, the one and the many. Thought is valid according as it has objective reference; *i. e.*, the idea is worth most which becomes best realized in the object of thought. That subject is most important of which most things can be predicated; it has value in proportion to the variety of its determinations or connections. The One has a value directly proportioned to the Many from which it is distinguished. (3) In ethics the value of the end is measured by the effort which we will make to attain it. When we make a choice we recognize that choosing one thing means inhibiting others, and the value of the good which we choose is measured by the sacrifice which it entails. Such sacrifice is not, of course, total negation; for the moral end must realize all the impulses of the self; but in this realization the dominant element which is chosen finds its significance in the other tendencies which are subordinated to it. (4) in æsthetics the value of a stimulus depends upon the number of old habits which it touches off; those things are beautiful which have depth of emotional reference.

If we put together these various definitions of value, we may say that the one word which best describes what we mean by value is "agreeableness." This term is susceptible of two lines of interpretation, answering to the two categories of feeling and thought. On the one hand, agreeableness is pure sensuous pleasure, and the measure of value—if there could be any measure—the intensity of this feeling. On the other hand, agreeableness may be supposed to vary according to the complexity of the valued content or the number of its relations. The more complex and comprehensive a desire, the more we value its satisfaction. We find in it a greater number of points of agreement between our wish and the reality; the more complicated our activity, the more eventful is its solution, and the more varied the consequent gratification.

## THE PSYCHOLOGICAL INTERPRETATION OF VALUE

AN intelligible statement of the psychological formulation of value requires some preliminary remark on the psychological methods or view-points from which it is made: value is a conception so nearly concerned with the borderlands of psychology that an explicit summary of those outlines becomes desirable. "Methods," "principles," "outlines," "elements," "points of view"—all these are terms which upon scrutiny seem to be descriptive of the same group of facts. A method, as before said, is the adoption of some very general concept to serve as the type to which all the particulars under consideration must, if possible, conform—the guise under which they must all be thought. Any statement may be regarded as a psychological method which explicitly assumes some one fact as ultimate, and then attempts to read all conscious processes in terms of that one. This is the nature of any procedure upon hypothesis, and the suggestions and satisfactions which such a performance affords measure the efficiency of the method, the soundness of the principle, the validity of the point of view, or the ultimateness of the element. I believe that the best index to what a psychologist really is using as his method is most frequently to be found under the caption of "element," and hence that current psychological method can best be got at through a consideration of what is meant by a mental element. The criteria of the mental element are commonly given as distinctness and unanalyzableness; but the alleged simplicity of elements does not prevent their being frequently assigned the several attributes of intensity, extensity, and duration.<sup>1</sup> Hence the question might arise whether the space, time, and degree, as the forms under which all mental content must be conceived, are not the real mental elements. Since, however, this view is not subsequently developed in the writers mentioned, and since the attribute or the fact of quality is definitely assumed as fundamental, as in Titchener's figure,<sup>2</sup> we may conclude that the concept which they wish to employ is that of a manifold of initial qualities out of which mind

<sup>1</sup> See WUNDT, *Outlines of Psychology*, p. 30; TITCHENER, *Outline* p. 29; CALKINS, *Psychology*, chap. 8, p. 105.

<sup>2</sup>*Outline*, chap. 2, p. 8.

is compounded. "The total number of elementary qualities" which various experimentalists have reckoned up is an expression for them of the outfit or the resources of the normal mind, it being presumably agreed that these sensations are not to be taken as given entities, but as reflective abstractions, and that the concept of a manifold of qualities is a methodological assumption. The logical consequent of this view is Münsterberg's theory of psychical atoms.<sup>3</sup> A psychical atom, he thinks, never can be given in immediate experience, and is not measured by time, space, and intensity. Each atom is perfectly unique and dissimilar from every other; for, he reasons, if the atoms had any resemblance one to another, they must of necessity be composed of parts (since similarity means a partial identity). This view, then, is really explicative of what is contained in the preceding one: quality as quality is perfectly unique, and a multitude of such points or existences is posited for explanatory purposes.

The chief criticism against this view as it stands is that there is no warrant for calling this ultimate a manifold. Pure quality is for consciousness a homogeneity, not a plurality. An atom cannot be simple and at the same time dissimilar from a great many other atoms, for a many-sided dissimilarity implies a highly differentiated organization. If we had a thousand objects each different from every other in the thousand, then we must have within every one of those objects nine hundred and ninety-nine grounds of distinction. Every added point of difference is an added point in inner complexity. There is only one absolutely unique thing, and that is the universe. If we are looking for a psychical atom pure and simple, we must abstract from our impressions of red, sweet, soft, etc., and find the common element in all of them; but what we shall get is a blank, undifferentiated experience, which could be called pure feeling, pure being, or the state of Nirvana—not a congeries of divers atoms.

In this connection some attention should be given to the attempt to classify conscious elements in the two co-ordinate groups—sensation and affection; or even the three—sensation, affection, and conation. When we say that there is a distinction between knowing, feeling, and willing, is that any warrant for saying that we mean three co-ordinate classes of elements waiting to be combined into concrete experiences? Indeed, to conceive these three mental states

<sup>3</sup>*Psychological Review*, Vol. VII, p. 1.

as built up analogously, each from its own pile of material, is to do violence to all our ideas of the nature of the relations between these states and of their function in the whole conscious economy. A "sensational element" is no more akin to thought than an affectional or conative element is. This division into three co-ordinate classes is, then, no index to the relation between thinking, feeling, and willing; nor, on the other hand, can we find any justification in the nature of the elements themselves for such a division. As present experience red and blue are just as different from one another as are yellow and pain. What inner connection puts pleasure and pain into one class and purple and sour into another? In a word, our experience as elementary is not classified.

The view which would make the psychical element—or, as I prefer to call it, the psychological ultimate—some sort of homogeneous, qualitative existence finds implicit support in some of the guesses which have been made concerning the genesis of our psychical processes. James's conception of the infant's consciousness as a blooming, buzzing confusion, which contains potentially all future differentiations; Stanley's position,<sup>4</sup> that primitive consciousness is an inarticulate stimulation, called for convenience pure pain; Horwicz's surmise,<sup>5</sup> that the original psychic life of children and animals may have been but an oscillation between pleasure and pain—such statements as these are what might be called consistent sensational theories, in which the element is the last point of analysis; a pure abstraction conceived, not as a matter of experience, but as a principle of explanation; a given something to start with, out of which all later psychical manipulations are developed. If, now, it be assumed that such a development out of a continuum of feeling is just what takes place, not only in passing from child-consciousness to adult consciousness, but also in every conscious act whatsoever, then we should have a theory or method which would be the legitimate outcome of the assumption of sensation (or affection) as elementary. This theory, though not expressly subscribed to by those who use the idea of elemental sensation, seems to be the only tenable formulation of their views. The many sensations are, as we said, posited for the sake of explanation; but it seems possible to make less assumption and more explanation if we agree that, instead of a given manifold, there is one given stuff of which we at first

<sup>4</sup>*Philosophical Review*, Vol. I, p. 433.

<sup>5</sup>*Psychologische Analysen*, Book XIV, p. 351.



posit nothing further; but we recognize that we shall later see in it the nucleus of all psychical modifications. The question of how those modifications arise is still untouched, but an activity drawn out of a feeling continuum is certainly a no darker saying than an activity made by the addition of parts together.

Granting that the assumption of feeling as the element, and the explanation of conscious process in terms of feeling, is a conceivable and even defensible position in some respects, it still seems possible to find a better one, some more adequate expression for the fundamental psychical fact.

In order to show the grounds upon which volition may be accepted as such a fact, let us revert briefly to the status and function of metaphysics, and to its connection with psychology. Metaphysics is essentially a question, not an answer; it propounds the categories which the sciences weave together into systems of their own. It is quite thinkable, therefore, that there should be in some minds a presumption always in favor of a dualistic or a pluralistic metaphysics, because such a dualism contains an expression of doubt, and does not, like some specious monisms, silence inquiry where it cannot answer questions. The function of metaphysics is to generalize our questions, and its legitimate province is the realm of suggestion. To the questions of metaphysics skepticism says there is no answer, but the sciences postulate a point of view. The only really metaphysical answer we ever get is the assertion of an unknown absolute which is the solvent of all antitheses. This, however, is never what we are actually after; it is not metaphysical certainty, but practical satisfactions, which we work for; and hence it is to science, which is engaged in working out practical controls, that we must look for systematic and unified answers. In metaphysics, for example, the antithesis between thought and feeling presents involved situations to which we have only practical, non-metaphysical answers. How, theoretically, can pleasure ever compensate for pain? Schopenhauer maintains that no amount of pleasure can ever make up to us for having suffered pain. Yet, practically, we do balance pleasure and pain, and count one as offsetting the other. Again, what guarantee is there, theoretically, in even our most ardent desire that we are going to get what we want? But, practically, we are convinced that if we only want a thing badly enough, and try for it hard enough, we are sure to get it. From one point of view it seems impossible

to speak of self-control; for how can anything either resist itself or control itself? Constraint must come from the outside, and experience as a succession of resistances and controls must be the result of two independent centers of influence. Yet we do hold to the conception of self-regulation. Metaphysics, then, is an inquiry, and science is a positive answer or practical conclusion. If metaphysics proposes as its basal antithesis the difference between thought and feeling, then the answer to its question, in metaphysical language—*i. e.*, the concept which contains the two—is something, pure being perhaps, which is neither thought nor feeling, and of which we have no grasp; but for the science of psychology there is a solution of the question in the concept of will or self-control.

In favor of the adoption of the activity concept as the first datum of psychology the following points may be urged. In the first place, there is a constantly growing recognition of the motor character of all ideas, and the essentially purposive nature of every slightest conscious experience. This tendency is apparent in statements which declare that the very existence of an element depends upon a point of view. Again, if we assume that the object of all the sciences—which is also their limiting concept—is control of one sort or another—as in physics the object is mechanical explanation and mechanical control, or in biology the object is the explanation and control of living organisms—then how can the object of psychological science be more fitly named than by calling it self-explanation, self-possession, or self-control? This final practical object of a science is just the whole concrete experience which gives the foundation and warrant for the science and is its limiting concept. We may bring out the relation between this sort of an ultimate and our ordinary conception of the element by adverting to the criterion by which such an element is selected. It is customary to speak of an element as that which cannot be further analyzed; but if our theory of the analytic-synthetic character of judgment be correct, it ought to be quite as appropriate to say that an element is that which cannot be further synthesized; and with this aspect of the case in mind the idea of a concrete control or activity seems peculiarly suited to answer the purpose of an ultimate formula. If we wish to express the act as the limit of analysis, we may put it in this way; that this most familiar, tangible, and concrete aspect of our experience, the act, is the very thing which seems complete in itself and

defies resolution into anything more final. Is not action our most ultimate answer to any situation or question? What can we further than to do something about it? The psychical element, then, can justly be described either as the point where analysis ends and synthesis may begin, or equally well also as the point where synthesis ends and analysis may begin. It seems, therefore, an appropriate characterization of the element to say that it is the ultimate or fundamental psychical fact and the chief explanatory concept of psychology. For psychological theory, habit and attention, reason and passion, thought and feeling, will all appear under the form of volition or as some phase of self-control.

A rough and ready preliminary statement of such control may be made as follows. If we were attempting a history of our idea of control, we should have to recognize that self-control, as we now think it, is the product of a long process of civilization. Government has proceeded from the external and highly despotic to the internal and democratic. The savage chief ruled by virtue of his war-club; but, although his tribe yielded him a physical compliance, their obedience was relatively meager, contingent, and irksome; and for his part he must have had but little—merely a momentary subjection—to enrich his feeling of governorship and control. In contrast with the primitive chief stands the president of a democracy, who finds himself ruling through the choice of those whom he rules. His claims to obedience rest upon firm rational grounds, and he feels himself a part and an expression of the internal, subjective life of those about him. The people, on their side, obey him as naturally as their own idea, and, far from finding civic obligations contingent, impertinent, and irksome, they frequently feel them to be richly interesting and convincing. There comes, thus, to be a gradual internalizing of government and an identification of the governing with the governed. This is just what takes place in every act of our conscious adjustments. When our occupation is interrupted by some extraneous stimulus, this disquiet seems like an absolute and despotic summons to break with what we are doing, and we have to yield to the authority of the external fact. This submission consists in attention to the fact or stimulus, in tracing its lineaments, copying it, or conforming our minds to it in a detailed way, until the first blind turning becomes a cognition of the situation. As this grappling of the mental process or of the subject with the fact con-

tinues, the control of that process or that self undergoes a change; the train of thought which was interrupted fades into the background, and this new train of thought comes to occupy the mind so completely that the content of the self becomes identical with the thing to which it was conforming, and there takes place an identification of the self with the controlling factor. This reversal of the situation, or regained ascendancy of the self, is the completed act of self-control or possession. This practical outcome of all activity, then, the representation and redefinition of the stimulus, which we call control, will be the starting-point and the check upon our considerations of psychological method.

So general a category, however, is not more than a starting-point, and we must look for some more special conceptions which shall be both comprehensive and apposite in their presentation of the facts, and at the same time susceptible of this general interpretation. There are, in my judgment, four such psychological methods in the field. These four are not mutually exclusive or antagonistic—being four presentations of the same truth—nor need that number exhaust the possible methods; but in the present outlook upon psychological science they seem pre-eminent. These views each characterize in their own way the fundamental aspect of the conscious process, and according to those characterizations may be named the Volitional, the Representational, the Discriminative, and the Experimental. We shall go on, then, to outline these four methods, and to make a statement of value or meaning in the language of each of them.



## I. MEANING FROM THE POINT OF VIEW OF ACTIVITY

In electing as a psychological method the conception of activity, we are bound, as we said, to a certain attitude toward the concept. We must regard it as the final word of explanation, as that from which as concrete and unrationalized we start out, and as that to which we come back in our most generalized statement—the ultimate being. We treat it as that which, if given, we can get the rest out of. All psychic phenomena, then, must find their order and significance within an act—all conscious process being a kind of striving. The category of activity is commonly found discussed under the name of will, desire, attention, and conation or effort; but belief in its applicability to all forms of conscious life is supported by the fact that in these discussions interest seems to focus in the most highly generalized aspects of the mental process, and that the characteristics most dwelt upon under desire, attention, and so on, can with reason be alleged of all conscious experience whatsoever. This is evidenced in the following cases.

First let it be said that in the contemporary psychological treatment of activity there appears to be a dawning uniformity in the direction of identifying the problem of will with the problem of attention. Among those who do this are Wundt, James, Dewey, Külpe, and Münsterberg. The two terms, “Will” and “Attention,” therefore, will be used interchangeably to the extent that citations concerning each of them will be considered relevant to the other.

1. The anticipatory nature of volition, the forward reference of will, is one of the facts which most frequently solicit notice. Thus in effort there is always some object ahead, in desire some image of a coming gratification. Münsterberg in the *Willenshandlung* takes “anticipatory idea” for text; and James discusses attention in terms of ideational accommodations or preparatory excitement of the centers. Stout also dwells upon the expectant attitude in all attention.<sup>6</sup> Concerning the anticipatory character of consciousness in general there is a most explicit statement in Miss Hitchcock’s “Psychology of Expectation.” All consciousness, she believes, is tinged with expectancy. It is presumed also that the forward refer-

<sup>6</sup>*Manual of Psychology*, p. 247.

ence of conscious process (the anticipatory) is even more fundamental than the backward reference (the memorial), thus: "The conclusion is pressed upon us that expectation is a more primitive form of ideation than memory"<sup>7</sup> (adding, however, that "a precedence of this kind is limited only to the lowest and most primitive stages of consciousness"). Her concluding sentence reads also: "We are thus justified, not only in saying that all complete knowledge involves anticipation, but also in affirming that all rational expectation is knowledge." Professor Royce is on the verge of, if not completely over into, a similar position where he says: "By the word 'idea' . . . I shall mean . . . any state of consciousness, whether simple or complex, which, when present, is then and there viewed as at least the partial expression or embodiment of a single conscious purpose."<sup>8</sup> Professor Dewey's remark that "a certain conceived state of the self is the object of desire"<sup>9</sup> is a sort of corollary to the above views. Those views say that all consciousness is essentially anticipatory; this view, that anticipation involves all of consciousness, that the object of desire is the whole self, and that the process of volition is a completion of this identification: "What the child concretely desires is himself in possession of the apple."<sup>10</sup> To sum up in a word the above characterizations of mental process, we may say that all consciousness is primarily prospective or anticipatory, that it always starts out face first.

2. A second specification about desire (not very different from the first) may also be predicated of consciousness at large; namely, the fact of objective reference. On the one hand, Baldwin differentiates desire from other centrally initiated process by the reference of the former to a representation or a pictured object.<sup>11</sup> "The objective reference is what distinguishes desire from other centrally initiated reactions. When this outward tendency (restlessness) is chained down to a single outlet clearly pictured in consciousness we have desire." On the other hand, we have in Brentano's principle of division among the conscious processes an adoption of "objective reference" as the characteristic of all psychic manifestations. It is true that Brentano himself considers desire as merely one sort

<sup>7</sup>*Psychological Review* (monograph), January, 1903, p. 30.

<sup>8</sup>*World and Individual*, first series, p. 22.

<sup>9</sup>*Psychology*, chap. 18, div. 1, "Desire," p. 362.

<sup>10</sup>*Ibid.*

<sup>11</sup>*Mental Development*, on "Sanction of Desire," pp. 372-92.

of reference, and does not therefore recognize its presence in every conscious state, but by dividing his data according to the "mode in which consciousness refers to an object" he implies that the objective reference is fundamental to all.

3. Once more, in the experience of effort we seem to get the inner kernel of the attentive process, the most voluntary part of volition; and yet it is just these strains and tensions, this sense of motor and organic presences, which is the most invariable substrate of our every psychic moment. There is no consciousness, however "passive," which has not in it some thread of tension, some faint hovering sense of personality in its awareness. (Peripheral excitations there may be and cortical vibrations, or the physiological presence of things which we afterward "recall" and suppose that we must have been conscious of; but I cannot imagine any actual awareness which is wholly unaware of itself.) The same psychic content appears in the experience of self as in the experience of effort—reduced by some writers to strains in the chest, head and neck. To borrow from James's phrases, the effort we make seems to be a thing peculiarly our own, and in the dull heave of the will it is ourselves which we seem to be throwing into the scale. This personal tang and sense of effort—they may be ever so vague and unobtrusive—are discernible in all mental states.

In the opinions thus far cited there appears to be possible an agreement with the conception of activity as a method; that is, these views, without explicitly adopting it, lend themselves to such an amplification. There are not wanting, however, theories which definitely support this view. In the ethics of Aristotle the moral act is designated as the mean between excess and defect—the excellence, the idea or the characteristic of a man being the fulfilment of all his abilities. Activity (in this case called moral activity), conceived as the mean, involves the conception of the functioning of all the limits; *i. e.*, the middle course is an expression of both extremes, and the conscious phenomenon which is the mean involves the arrangement of all the other aspects of consciousness. In contemporary thought the essentially active nature of consciousness is voiced in that whole point of view which regards mind as developed out of the response of the organism to critical situations, and which points out the essential significance of mind in the adaptive or adjustive function whereby it enables the organism with which it is

associated to maintain itself in face of its environment. Apart from certain implications contained in this statement relative to the connection between mind and body, it is a good expression of the thought that every minor process finds its value within some larger purpose, until even consciousness itself as a whole finds its significance in being the means to a purpose beyond itself. According to Wundt, apperception, the sole original act of will, is the indispensable factor in all intellectual and affective differentiation. In the following passages<sup>12</sup> he seems to elevate activity to what we have described as the position of a method:

*Feelings* are parts of *emotions* and emotions are to be considered as components of *volitional processes*. . . . All these affective processes may, accordingly, be subsumed under the general concept *volitional process*.

Also this:

Thus, *volition* proves to be the fundamental fact from which all those processes arise which are made up of feelings. Then, too, in the process of *apperception*, which is found through psychological analysis to have all the characteristics of a volitional act, we have a direct relation between this fundamental fact and the ideational contents of experience which arise from the spatial arrangements of sensations. Now, volitional processes are apprehended as unitary processes and as being uniform in character in the midst of all the variations in their components, etc.

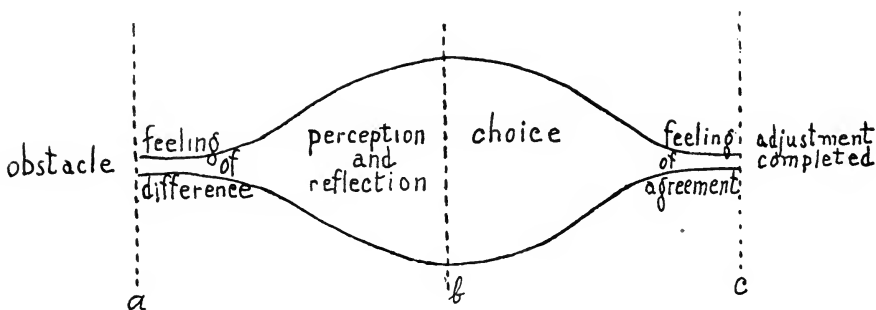
Pre-eminently identified with the activity theory stands Professor Dewey in the conception of will as the mediation of impulse, and as the co-ordinative or unifying aspect of all conscious distinctions whatsoever.<sup>13</sup>

Believing that activity and desire are characteristic of all conscious phenomena, and that all desires as such are operative in much the same manner, we should then look for our first classifications in some general ground of cleavage running through the contents or objects of desire. In looking from the outside at the fulfilment of some intricate purpose, it becomes at once apparent that the object of endeavor is a thing which shifts from moment to moment within that purpose; each item of the elaboration becomes itself for a space the object of desire, so that a cross-section of such an activity would display differences in these "substantive" states according to the

<sup>12</sup>*Outlines of Psychology*, secs. 15, 10, and 11.

<sup>13</sup>See especially *Syllabus of Ethics*, sec. xii; "Theory of Emotion," *Psychological Review*, Vol. I, p. 553; Vol. II, p. 13; and "The Reflex Arc Concept," *ibid.*, Vol. III, p. 357.

level at which it was made. The greatest difference, or at least the most highly generalized distinction, among the objects of desire is the difference between stimulation and pacification. We desire in general, that is to say, either to be stimulated or to escape from stimulation. Another way of putting it is to say that it is a difference between greatest and least excitation. If we might picture a conscious adjustment as a weaving together or merging of independent strands, then we could say that the cross-section which exhibited the greatest number of independently grasped threads—*i. e.*, the point of maximum distinction—was also the point of highest stimulation; or, again, that stimulation was the consciousness of the material, and pacification the consciousness of coalescence. The widest divergence in the psychic level is the difference between the crest and the trough of the wave, the maximum of excitement and the completion of allayment. The relation of the two kinds of desire within a single act will be apparent in a reconsideration of the account given above. Following upon the emotion of surprise occasioned by the injection of an obstacle—a clash of habits—we have a reflective-perceptive state of mind in which we have spread out before us all the elements in the situation. These are then eventually gathered up and put away in our choice or reaction.



In the diagram the object of *a* is the cross-section at *b*, the maximum of distinction, and the object of *b* is the point *c*, or perfect pacification. It is common enough to observe that every act in its very nature aims at its own cessation, strives to accomplish its own end; but it is equally obvious that every act in its inception registers a preliminary desire for a heightened stimulation. The rational ground for such a desire would be the fact that in cases of inter-

rupted habit some additional shove is necessary to the final discharge of the motor apparatus. When the first surprise comes to us, we literally "want to know" what the difficulty is; we wish a developed and detailed excitation instead of the elementary, inarticulate one. The desire for excitement is the desire for the auxiliary means which will precipitate the act. Much of our aimless craving for excitement and the pleasure which we often find in mere stimulation as such, is really a craving for and a pleasure in the idea of our own heightened effectiveness, is a desire to feel that we can do something. Within a given activity, then, we find things which please by reason of their exciting qualities, and because they are consonant with the high tide of the active pursuit, and things which please in their soothing character because they are contributory or agreeable to the conclusion of the act.

The practical pertinency of the above division of desires is illustrated in the following particulars. "Writers upon color, decoration, ornamentation," says Titchener, "recognize two types of color scheme: the dominant and the contrasted;"<sup>14</sup> and this is descriptive of a difference which can be observed in other circumstances of enjoyment. We take a pleasure in the contrast of stimuli, which gives a certain vivacity, spirit, or brilliancy to the experience, and pleasure in the easy blending of stimuli, which affords an alluring sense of smoothness. Again, the rhythms or periods which invade our every occupation from the least to the greatest are a further index to the same fact that what we need and what we strive for is now motion or strain and now rest.

The intimate nature of will—will in the narrowest sense, or activity most active—is conceded to manifest itself in the experience of effort. Indeed, an analysis of effort seems to promise for psychological method a description of the most typical and the most schematic case of self-control. Although, as we said above, effort is, strictly speaking, coextensive with consciousness and with desire, yet we shall choose to regard it as more manifest in the desire for stimulation than in the complementary desire for pacification. Effort, that is, is most apparent in just that point in a conscious adjustment where conflict is at its height and most distressful, and where characteristic muscular and organic reactions are most distinctly present. An experience of effort, such as the case of extreme

<sup>14</sup>*Outline of Psychology*, chap. 13, sec. 88.

physical exertion would illustrate, gives us the following situation: first there is a consciousness of incoming sensations from the motor apparatus directly relevant to the proposed reaction; and then, as with continued resistance a bigger levy is laid on the organism, there come pouring in sensations from the whole executive mechanism, so that, whereas a well-practiced reaction is run off with facility and precision, the difficult adjustment is accomplished with pain, and accompanied by many superfluous irrelevant movements. Following Titchener's analysis,<sup>15</sup> we should agree that the consciousness of self as most intimately active — the experience of effectuation — reduces to just these terms of muscle, joint, and tendon sensations. A piece of confirmatory evidence for this position appears in a rather curious sort of experience which some persons have observed in themselves. Thinking of something wholly removed from his present physical condition, one may suddenly become aware of the involuntary twitching of some muscle or group of muscles ordinarily within his control. The twitching certainly has not been anticipated and perhaps cannot be stopped at will, but all at once that movement may seem to the person to be his very own, may take on all the warmth and closeness of his most personally directed action, feel exactly like the expression of his own voluntary command. He may exclaim to himself: "Why, I'm doing this." The same thing has been remarked in the case of some movements which can be electrically stimulated. The conclusion to be drawn is that the mere awareness of movement is in some cases equivalent to the fullest consciousness of effectuation.

An explanation of the experience of effort or conation has first of all these two questions to answer: What is the rational basis of the desire for stimulation? and, What is the special significance of the various sensations, muscular, tendinous, organic, and so on, which distinguish the experience? In answer to the first question we should begin by saying that in effort we come to the most poignant consciousness which we ever have of the meaning of causal connection; we realize then most vividly that one thing is essential to another, that in order to do one thing we must do this other. The appreciation of means as such is very distinct. Will is an appreciation of this fact of prerequisite. To explain this further, we may describe will as involving always a certain reversal of

<sup>15</sup>*Ibid.*, sec. 36.

brain processes. In the idea of the anticipatory nature of action we have implied the secondary character of all voluntary movement; *i. e.*, no movement can be made voluntarily which has not, at some previous time, been made involuntarily. We may, therefore, say that will (and, indeed, all intellection) depends, on the neural side, upon the reversibility of the processes of association. Suppose that some movement produces regularly some result—that there is a current which passes from *a* to *b*. Now, if this current is never checked back in its course, but continues to travel the same road in the same direction, we should never take any cognizance of the connection between *a* and *b*; but the emergence of the case into consciousness depends upon the stimulation of the *b* end of the line first, and the subsequent filling in of the *a* end; *i. e.*, upon there being first a vague consciousness of the result, and then a consciousness of the execution, or the attempted execution, of the movement. Unless a current can flow or press backward to some extent in its path—unless, in other words, it can open up the road and help from in front, and not merely push along from behind—we shall get no conscious notice in the situation. (The condition of such a stimulation from the *b* end is plainly the interference in the habitual mechanism of some second impulse—a conflict of habits.) Our object in the conscious struggle is, therefore, to fill in the intermediate steps between our present status and the limit set by this interruption of habit, to get the *a* end of the process sufficiently active so that the motor discharge can take place in the proper direction. In psychical terms, our effort is directed toward the development of the stimulus. Gaining control over a situation or an object consists in arranging an articulate scheme of stimuli which will touch off the discharge into that object. Consciousness in this way absorbs, we might say, the function of the environment. The inadequacy of the original shove is mirrored in consciousness by the evolution of the series of ideational contents; for in the new adjustment we must link together various partial reactions, and each one of these hitherto mutually independent bits of mechanism has to have its own cue in consciousness. Planning for a future event, then, is a setting up of some system of cues, and the voluntary act is, so to speak, a “put-up job” on the physical organism. It is, then, the prerequisite or the preliminary stimulation which we are practically striving for; in our search for happiness what we actually work for is not happiness, but the things which bring happiness.



That is what we mean in saying that in effort we have a desire for more stimulation.

Ordinarily we say in cases where the struggle has not become extreme that this desire is a striving for more stimulation of a particular kind; but I think that in cases of extreme effort it also comes out clearly that a desire emerges for more excitation of any kind whatsoever. Not only is irritation of the motor tracts proper to the attainment of the object called for, but irritation of any and every executive in the body. Introspectively, we seem in the case of desperate effort to be trying to throw our whole selves into the performance of the act in question. On the physiological side this tendency would mean a heightening of the general cortical irritability, and a pervasive excitement of the whole organism. Whether or not we could be justified in holding that such general excitation could be translated or appropriated to some slight degree into a special excitation — *i. e.*, whether it could drain off in any sense from the whole cortex into this specially excited path — is still a question. But it does seem plausible to say that this general irritability tends to shake loose any latent capacity already present in the special motor tract under discussion. In other words, stimulation at large may conceivably add some drop of effectiveness to the special reaction. In support of this view, or at least as lending themselves to this interpretation, we may cite:

a) The analogous explanation in cases of sense-perception; *i. e.*, in the experiment with a tuning-fork and a subliminal color stimulus; when the fork is struck the color flashes into consciousness, and this result is accounted for on the ground that the sound stimulus raises the general cortical excitability.

b) The therapeutic value of great excitement, apparently of any kind whatsoever; even a painful shock, in certain cases of insanity.

c) The fact that athletes always take occasion to work up their general explosiveness before they attempt any special feat.

d) The craving for any kind of excitement which takes hold of a person when he has undertaken some work too big for him.

According to this view, then, the presence of irrelevant movements and organic disturbances is the record of our attempt to touch off all the motor cues in our power, or to put our whole selves into the solution of our problem. It indicates that, as plan after plan of action has failed and every effort been baffled, our reaction finds itself on the road to become a mere futile emotional convulsion.

The maximum of stimulation is reached in that act which is hard enough to stir our best effort, and yet not so hard that it balks every special attempt at its accomplishment until the current, dammed back, becomes degenerated and diffused in mere general irritation.

In looking about for the particular expression which the language of effort gives to our conception of value, we naturally enough take to the term "meaning," in the sense of intention, as embodying or standing for that prospective stimulation of which we have been speaking. The thing which we strive toward, our proposal or plan, that which we mean — in a word, our intent — is the exponent of our values. That act is felt as most important which, in the furtherance of a single purpose, necessarily points forward to the richest complex of ideational processes or the greatest number of points of stimulation. The meaning of a conscious process is measured by the elaboration of the intention or the proposed system of stimuli which it embodies. That life is most worth while which has the greatest investment in future interests, and which has for its object an amply diversified program.

## II. MEANING IN TERMS OF DISCRIMINATION

In contrast with the voluntaristic method just discussed, we may call the method next to be considered one sort of intellectualistic conception—the sort which pronounces the discriminative-associative character of thought to be its most ultimate aspect. This method, the outcome of the old associationism, finds ample indorsement also in more recent theory. Bain:

The primary, or fundamental attributes of Thought, or Intelligence, have been already stated to be, Consciousness of *Difference*, Consciousness of *Agreement*, and *Retentiveness*.

Also:

The first and most fundamental property is the Consciousness of Difference or Discrimination. To be distinctly affected by two or more successive impressions is the most general fact of consciousness. We are never conscious at all without experiencing transition or change. (This has been called the law of Relativity.)<sup>16</sup>

Sully:

This discernment of difference is the most fundamental and constant element in all intellection. It is known as Discrimination.<sup>17</sup>

Spencer:

From the most complex and most abstract inferences down to the most rudimentary intuitions all intelligence proceeds by the establishment of relations of *likeness* and *unlikeness*.<sup>18</sup>

The relation of unlikeness is the primordial one—is the relation involved in every other relation; and can itself be described in no other way than as a change in consciousness.<sup>19</sup>

The ultimate relation, therefore, is nothing more than a *change* in the state of consciousness; and we call it either a relation of unlikeness or a relation of sequence according as we think of the *contrast* [discrimination], between the antecedent and consequent states, or of their *order* [association].<sup>20</sup>

Ward says:

Of the very beginning of this continuum [*i. e.*, the field of consciousness]

<sup>16</sup>*The Senses and the Intellect*, 3d ed., p. 321.

<sup>17</sup>*The Human Mind*, Vol. I, chap. 4, sec. 3, p. 62.

<sup>18</sup>*Principles of Psychology*, Vol. II, chap. 24, sec. 371.

<sup>19</sup>*Ibid.*, sec. 373.

<sup>20</sup>*Ibid.*, chap. 25, sec. 374.

we can say nothing; absolute beginnings are beyond the pale of science. Actual presentation consists in the continuum being differentiated; and every differentiation constitutes a new presentation. Hence the commonplace of psychologists: We are only conscious as we are conscious of change.<sup>21</sup>

Concerning what takes place in the process of discrimination most writers have been content to say that there is an analysis or singling out of parts in a whole: discrimination, which is used as synonymous with comparison and is understood to imply its complementary aspect association, is said to be a discernment of likeness and difference, a detection of variety in unity and unity in variety. There have, however, been attempts to treat this elementary process in a more elaborate way. Sully, for example, tries to separate discrimination from differentiation in this way: He sets down differentiation as the preparatory stage to discrimination, and would have us suppose that in the merely differentiated phase certain elements have somehow shouldered themselves up into consciousness and are waiting to be known as different. He says:

A and B must be presented and noted as two distinct impressions before we become conscious of the relation A—B. [And in the footnote:] This applies to all intellection as a relational and relating process. The mental apprehension of a relation of difference, likeness, or succession in time must be carefully distinguished from the experience of having two unlike, like or successive impressions.<sup>22</sup>

The same thought appears in Wundt:

The erroneous view still finds frequent acceptance that the existence of psychical elements and compounds is the same as their apperceptive comparison. The two are to be held completely apart. Of course, there must be agreements and differences in our psychical processes themselves, or we could not perceive them; still the comparing activity by which we perceive is different from the agreements and differences themselves, and additional to them.<sup>23</sup>

I am inclined to add one more acceptance to the "erroneous view." Surely in psychology, if anywhere, the "being" of a thing is its "being perceived." I cannot imagine what a change in consciousness could be which was not also a consciousness of change. The addition of higher processes of comparison simply pushes the ques-

<sup>21</sup> Art. "Psychology" in *Encyclopædia Britannica*, p. 45.

<sup>22</sup> *The Human Mind*, Vol. I, chap. 7, sec. 3.

<sup>23</sup> *Outline of Psychology*, Part III, sec. 17, par. 6.

tion back to what we mean by the first primary differentiations, and how the rudimentary agreements and differences got there; it seems really to be involving the expression of the problem without making any advance toward its solution. As Külpe says of sensible discrimination:

The phrase "sensible discrimination" must not be taken to denote a faculty of comparison, in the sense of a peculiar conscious process existing alongside of the various contents. It merely expresses, in the first instance, the general fact that we have different experiences and experience them differently; in other words, it covers the introspection of different contents and the report of their difference.<sup>24</sup>

Probably the two most notable expositions treating avowedly of the fundamental nature of the discriminative process are those of John Stuart Mill and Professor James. In Mill's experimental methods for the selection of the cause of a given effect we have offered four or five different forms or groups of circumstances in which the same principle may exhibit itself. The selection of the "sole invariable antecedent" is the problem. But when we are told to regard as the cause of a phenomenon that which is always present when the effect is present (and absent when it is absent), we must suppose an already highly analyzed and formulated series of antecedents in the situation. We presuppose a definite and recognizable "that which"—some known thing which we are to decide about as being present or absent; *i. e.*, we must have some pretty definite preconception of the possible causes or antecedents before we could know if any one were always present or not. Mill's directions would apply very well in case of a formulated disjunctive question; *i. e.*, if we knew that the cause were either *B* or *C* or *D*, then we could proceed to our observation as to whether *B* or *C* or *D* were the sole invariable antecedent. In many cases, however, the question is left indefinite; it is, "What is the cause of *A*?" not, "Is the cause *B* or *C* or *D*?" And the experimental methods do not answer how we are to get a definite somewhat out of this indefinite what.

James attacks the question in the two complementary aspects of "dissociation by varying concomitants" and "association by similarity or partial identity." Each of these formulas, in spite of its value from a descriptive point of view, seems inadequate as an explanation, since it is expressed in terms of that which it purports to explain. In the "varying concomitants" the discriminations are

<sup>24</sup>*Outline of Psychology*, Part I, chap. 1, div. 5.

already given which we wish to know about, the variation is the whole question, and in the association by "partial identity" it is just the nature of that partition and that identity which is the object of our inquiry.

All statements of discrimination, it seems to me, must be finally forced back to the conclusion that on the psychical side this activity is primarily a consciousness of difference or of change, and that further investigation concerning it must begin with an inquiry about the meaning of the physiological substratum of discrimination. The process which psychically is a consciousness of shift finds its occasion in the almost infinitely varied field of nervous modification, and any profitable account of the discrimination of the normal mind must make some allusion to the genesis and purpose of the differentiation of the sense-organs. This is, of course, merely an iteration of the fact that all psychical process is correlative with nervous process, and that it must find at least a part of its significance in that connection. Historically the associative-discriminative aspect of consciousness has been the one worked out in a physiological interest, and it is the place, therefore, where the body-mind discussion seems most appropriately to come in. The law of association, as worked out by the old school, particularly in the case of Hartley, Priestly, Lamettrie, and Condillac, was almost completely physiological in its statement. At the present day nearly all psychological accounts of association and habit are carried on frankly in physiological conceptions, and in many cases — *e. g.*, explanations of color-contrast — our tendency seems to be to work away, when possible, from the psychical to the physiological formulations. It seems peculiarly satisfactory to us when we can definitely locate some mental function — find, say, the occasion for a discrimination in the conformation of an end-organ; for that seems to be a guarantee of the accessibility of that function to control. As psychologists, then, it is becoming not to reject or neglect the physiological explanations which are of such unquestioned service, but to interpret what from the psychological standpoint we mean by physiology or by the relation of mind and body.

It seems to me that from the point of view of the experiencing individual his body is nothing more nor less to him than the residuary of the habits which are not within the range of present attention. His body is the substance of his possibilities — a name or symbol for

certain interests, powers, or perfected techniques. In the *Psychology* of Aristotle we find:

The soul . . . is the manifestation of the inner meaning of . . . a body. . . . If, for example, the eye were possessed of life, vision would be its soul: because vision is the reality which expresses the idea of the eye. The eye itself, on the other hand, is merely the material substratum for vision; and when this power of vision fails, it no longer remains an eye.<sup>25</sup>

A similar thought is expressed in an article by Professor Bawden:

The function of an organ is the meaning of that organ as expressed in its activity. . . . If I want to understand the meaning of any structure I ask how it functions. Function in biology is another word for meaning or significance. It is in this way that the psychical is related to the physical. Matter, so to speak, is the structure of which mind is the function, and the meaning or significance of matter comes out only in its activity, only as it functions.<sup>26</sup>

As Aristotle says, then, the soul is the idea of the body—it is the actualization of that which is potential in the body; and, as Professor Bawden rephrases it, the psychical is related to the physical as meaning is to fact. Agreeing with this, we may argue also for the corollary, that it is body which gives meaning to mind. Nothing, certainly, is more patent to us than our own mental state, and yet as such, as mere fact, of what use is it? Evolutionists would say that the sole function or purpose of consciousness is to effect an adjustment between the physical organism and its surroundings—that the disturbance of the balance is the only excuse of consciousness for existing. All our educational struggles seem to be directed toward the implanting—*i. e.*, rendering automatic or as purely physiological as possible—certain habits. Our aim is to modify neural structure. Schopenhauer's phrase is apropos when he speaks of the body as the "objectification of the will."

On such an hypothesis (*i. e.*, that the body is just the support of the technical element in experience) the investigations of physiological psychology become an abstraction from the more general study of habit. In the psychical distinction between attention and habit we are wont to call habit the mechanical and attention the purposive aspect of mental life. In our actual living the two are

<sup>25</sup> WALLACE'S translation, p. 63.

<sup>26</sup> *Journal of Comparative Neurology*, March, 1901; cf. McDougall, "A Contribution toward an Improvement in Psychological Method;" *Mind*, N. S., Vol. VII.

forever interlaced, but the physiological standpoint is, to the psychical individual, an abstraction which takes the mechanical side as fundamental. As a thing retreats toward the fringe of consciousness, it tends to become immersed in the vague medium of common feeling or to be submerged into mere somatic disposition. Physiology is a statement of that part of the individual experience which has become most submerged and mechanized — a statement about the experience which has ceased to be immediate, and hence has passed out of the field of psychology proper; it is a science which accepts the mechanical point of view as final, and which formulates the mechanical control toward which psychology as a whole is directed.

If the above view can hope to be explanatory of anything, it is in this way, that it considers the relation of the “physical” stimulus to the “psychical” sensation to be precisely the same as the relation of habit to attention, and it suggests that stimulus *versus* sensation is but another group of terms expressive of the fact that consciousness is mechanical *versus* purposive, sensational *versus* intellectual, emotional *versus* rational, etc. A stimulus is not something which, starting in the physiological mechanism and itself remaining physical, finally hits against a psychical something; but, just as we say of habit, it does start as physical, but itself becomes psychical; *i. e.*, it starts as a possibility and becomes an actuality. The quality of the stimulus corresponds to the content of the habit — the habit content is unknown save as a second habit conflicts with the first, and the stimulus quality is unappreciated except as the stimulus is discriminated from others.

It is of the very first importance, in any discussion of association as fundamental psychic fact, that we should examine what we mean by a psychic bond of union (an association) or by an experience of change or transition (a discrimination). In other words, the problem of conscious continuity seems to be the most suggestive way of reshaping the question of the nature of discrimination-association. Among the many doctrines directly or indirectly expressive of the general fact of the continuity of psychical states we may mention some of the most notable. Leibnitz proposed the theory of the *petites perceptions*, which are to be defined as the obscure substratum out of which apperception comes as final issue, or (in the plural) as the weak and in themselves unconscious impulses which, when summed together, give a conscious presentation. The impulse



of the monad, Windelband<sup>27</sup> explains, is directed toward passing from obscure to clear representations.

To this above-mentioned intensity of the representation Leibnitz applies the mechanical principle of infinitely small impulses: he calls these infinitely small constituent parts of the representative life of the monads *petites perceptions*, . . . . In the language of today the *petites perceptions* would be *unconscious mental states*.

A very similar conception is that introduced by Fechner in his interpretation of the Weber law, when he says that every least discernible difference within a given situation is equal to every other, or is capable of being a unit of psychic measurement. It should be observed in this connection that the assumption of any sort of measurability among psychic phenomena is, by the nature of measurability, an assumption of some sort of psychic constancy. The likeness of Fechner's conception to that of Leibnitz lies, of course, in the idea that an intense sensation is composed of a number of weak sensations added together. Not very far removed in its implications is the already quoted atomic theory of Münsterberg, in which the psychic presentation is supposed to be compounded out of forever unknowable atoms or unconscious parts. The conception of unconscious ideation rises to a position of great importance in von Hartmann's *Philosophy of the Unconscious*. His proposal there, developed gradually throughout the work, of a supportative background of unconscious will and idea as the residuum of all conscious process not immediately in play gives, as Leibnitz had done, a psychological name and status to that which others have called either a merely physiological condition or a metaphysical assumption; but von Hartmann differs from his predecessors by giving to the Unconscious (*i. e.*, to his idea of continuity) an importance equal to that of any clearly differentiated conscious content. Other and perhaps better expressions for the idea of continuity are the phrases "psychic disposition," "temperamental coloring," "stream of consciousness," "personal equation," "the self;" all these are phrases meant to be indicative of the shadowy influences which permeate our experience and set in relief the bolder lines of action.

Conscious continuity, I should say, is consciousness in its emotional aspect, and the reasons for characterizing this indefinite supportative background as emotional are as follows:

1. Emotion is conceded to be the conscious concomitant of com-

<sup>27</sup>*History of Philosophy*, Part IV, chap. 2, sec. 11.

plicated physiological disturbance; its intimate connection with instinctive and habitual reactions (however that connection is explained) is attested by all theories of emotion. Emotion is the psychic registration of the somatic conditions as a whole; in distinction from ideation, it may be said to be the simultaneous consciousness of many different things, and hence to reduce to a homogeneous indeterminate. Spencer's distinction between the physical and the psychical we may appropriate as a distinction between emotion and ideation:

The two great classes of vital actions called Physiology and Psychology are broadly distinguished in this, that while the one includes both simultaneous and successive changes the other includes successive changes only. The phenomena forming the subject-matter of Physiology present themselves as an immense number of different series bound up together. Those forming the subject-matter of Psychology present themselves as but a single series.<sup>28</sup>

The correspondence between emotional capacity and the equipment of habit is partly indicated in these points: (a) On the introspective side, the consciousness of a well-working habit seems to us to be appropriately designated as a feeling. When a piano player sits down to perform a long and intricate composition, he is conscious to a certain extent of the habit or practiced reactions which will carry him through, but in that consciousness there is no detailed appreciation of the separate finger movements or wrist and arm tensions, no recollection of the exact way in which he has played it before, nor of the number of times; his confidence comes rather from a pure inward conviction; he "feels" that he can do it. (b) The variety and intensity of emotional reactions vary directly with the number and strength of the habits in our mental outfit. In reading a novel or watching a drama we find that those characters most engage our interest and enlist our sympathy and appreciation whose ways and tastes are most like our own ways and tastes, who suggest to us our own habits. In contrasting human beings with the lower animals we are struck by the fact that the animal which has fewer and simpler instincts and reflexes is also more narrowly restricted in the range of his emotions. In adult life, with its more complicated adjustments, emotion finds more frequent occasion than in childhood, and displays finer and more numerous shadings and shiftings. (c) In the most violent emotions those parts of the organism are shaken which perform its most fundamental functions.

<sup>28</sup> SPENCER, *Principles of Psychology*, Vol. I, Part IV, sec. 177, p. 395.

In other words, those structures which represent in the history of the race the first-formed habits—the digestive, circulatory, respiratory, locomotive organs—are the ones which fill out the “resonances” in our stronger emotions; whereas in the more evanescent flitting emotions only certain nicely balanced individual movements take place. For instance, in cases of unusual effort or extreme anger the breathing, the circulation, the digestive tracts, and the larger muscles all seem to be involved, so that there survives after the emotion in both cases a distinct experience of muscular exhaustion and of nausea. On the other hand, many a momentary feeling is recorded only by some nearly unnoticed facial twitch or delicate trilling of the fingers. In this connection we notice that the words in common speech by which we define emotions are derived from the names of the most elemental and earliest-evolved sense-organs; *e. g.*, from touch, pressure, smell, taste, we get “feeling,” “taste,” “bitter,” “sweet,” “disgust,” “depression,” “exaltation,” “elation.” In the case of intellectual terms, on the other hand, we find the words used which point to the later-developed habits; *e. g.*, we “see,” “perceive,” “imagine.” Ribot implies that a more prominent part is played in emotion by the “lower” than by the “higher” senses, in his grouping of the lower sensations with emotion:<sup>29</sup>

The impressions of smell and taste, our visceral sensations, our pleasant, or painful, states, our emotions and passions, like the perceptions of sight and hearing, can leave memories behind them.

(*d*) It is pre-eminently in emotion that the tensions which constitute the content of self-feeling come into prominence.

Emotion, then, as correlative with the substratum of habitual tendency, is the index of conscious possibility. It includes the function of consciousness of self as the residuum of undeveloped intentions and as the guarantee of our identity or continuity in consciousness. It is, therefore, qualified to do duty as the Unconscious, the psychic disposition, the fringe of consciousness.

2. The second reason for identifying continuity with emotion has already been touched on: it is that the idea of continuity is, or involves the idea of, something persistent or homogeneous in all conscious process, something common in all psychic states, and that feeling or the emotional element fits such a description. Feeling is internally homogeneous, and it is present in every conscious process

<sup>29</sup>*The Psychology of the Emotions*, chap. 11, p. 141.

from the most convulsive outbreak of passion to the serenest intellectual contemplation.

3. Once more, introspectively, our experience of continuous transition is a feeling. Spencer says:

It is true that, under an ultimate analysis, what we call a relation proves to be itself a kind of feeling—the momentary feeling accompanying the transition from one conspicuous feeling to an adjacent conspicuous feeling.<sup>30</sup>

And James:

We ought to say a feeling of *and*, a feeling of *if*, a feeling of *but* and a feeling of *by*, quite as readily as we say a feeling of *blue* or a feeling of *cold*.<sup>31</sup>

Assuming, then, an emotional connotation for the idea of psychic continuity, let us proceed to a statement of the act of discrimination as a ground-work for the formulation of meaning. The process of discrimination may be described as the passage of consciousness between two points which form the limits of a continuum or a gradual shading from the one to the other. Every point in the continuum is to be regarded as a resultant of the two limits, and as itself a possible limit of some other continuum. The two termini are the intellectual phase of the experience, and the intervening continuum is the emotional part. Thus between blue and green there is a possible series of colors merging gradually from the one to the other, and at any point between the two there is a color which is neither blue nor green, and yet which is both—a color which, homogeneous in itself, may still be analyzed into blue and green. In this particular experience of discriminating blue from green this middle point is the place of neutral excitement—the “sensation of difference” of which James speaks—or an emotion which is indifferently either blue or green; it is the common element between them. But this experience may itself become the limit of a discrimination or one term (terminus) of an association. In the case of the blue-green there is possible a long series of fine shadings, but there are other experiences in which it is difficult to suppose any such series; *e. g.*, in discriminating a tone from a color. Even here, however, we must assume at least one common element, one point between the two experiences which contains something of each of them in order

<sup>30</sup>*Principles of Psychology*, Vol. I, sec. 65, p. 164.

<sup>31</sup>*Psychology*, Vol. I; CALKINS, *Introduction to Psychology*, chap. 10, p. 136, distinguishes a “relational” element in experience, separate, however, not only from sensational elements, but from affective elements as well.

that we ever get from one to the other, or that they may be modifications of the same consciousness. The postulate of continuity in consciousness is this, that the conception of the continuum or the presence of an indifference point between extremes shall hold good of every conscious act whatsoever; that, on the one hand, no two things can exist in consciousness so totally different but that some common ground may be found between them, and, on the other hand, that, even in the case of a least discernible difference, no two impressions can be so nearly alike, so close together, but that we can imagine some point between them which shall partake of the nature of each. Supporting this view, we have the common experience in the laboratory of being able to distinguish the fact of difference before we can tell the direction or the sort of difference. We can tell that two tones or weights or colors are different, but cannot tell which is which; and it is out of this consciousness that the discrimination of the two termini follows. On this general topic of psychic continuity we have also this from Ward:

At any given moment we have a certain whole of presentations, a "field of consciousness" psychologically one and continuous; at the next we have not an entirely new field, but a partial change within this field.<sup>32</sup>

And from Stout:

We have not merely A and then B, but also the passage of A into B; and this passage as such is a modification of consciousness.<sup>33</sup>

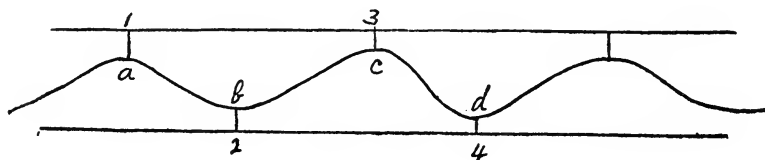
We can, if we wish, distinguish emotion as concrete or abstract according to the limits between which it stretches, but this distinction is made from some external point of view, not from that of the process in which the emotion occurs. Thus, in the discrimination of blue from green the feeling involved is the emotion of the blue-green series; but in comparing a statue with a flower the grounds of likeness and the emotions concerned are much more general. The anger of a civilized man is from this point of view more highly generalized than the anger of the savage; because in the case of the savage the emotion mediates merely between being hit and hitting back; *i. e.*, the reaction is well fixed and the series of movements more readily recognized as continuous; but with the man who checks his first physical responses the emotion of anger may have to mediate between the stimulus and some long-deferred revenge, and, since

<sup>32</sup>Art. "Psychology" in *Encyclopædia Britannica*, p. 45.

<sup>33</sup>*Manual of Psychology*, Book I, chap. 2, sec. 2.

the terms of the retaliation may be greatly varied, the emotion may have to be the sign of any one of a number of possible modes of response.

If, now, value emerges with the fact of reference, then, in terms of the above discussion, value must arise in the process of discrimination.  $a$ — $x$ — $b$ . The meaning of  $a$  lies in its reference to  $b$ —it must be read off in terms of that from which it is discriminated. In perceiving a difference between  $a$  and  $b$ , in saying that the meaning of  $a$  is  $b$ , we seem to be conscious in some way or other of two things at the same time. According to the accepted theory of attention, however, only one thing at a time can be within the focus of consciousness, and therefore, although the meaning of  $a$  lies in  $b$ , and the meaning is felt to be immediately apprehended, yet  $b$  cannot be present in its fullest intellectual character. For if the consciousness of value were constituted by  $b$  itself, then  $b$  and not  $a$  would be our mental content; *e. g.*, we value pleasure the more by reason of contrast with pain, but if our consciousness of this reference to pain were made up of the actual experience of pain, then we should not have pleasure at all, but pain. We may say that this consciousness of meaning is mediated by the intervening neutral state, that the feeling continuum which fringes or borders directly upon  $a$  is the symbol of value, or the sign of the other thought which is being referred to in the discrimination. Value is constituted by the act of comparison, but it is experienced as feeling.



Let  $a$ - $b$ - $c$ - $d$  represent the centers of attention in a train of thought, and 1-2-3-4 the feeling substrate. (The ordinates 1, 2, 3, 4 may vary in their length, but never quite become zero.) In the successive foci of the conscious process  $a$ - $b$ - $c$ - $d$ , the meaning of  $b$ , say, is constituted by its relation to the train of thought  $a$ - $c$ , but in a cross-section view of consciousness at  $b$  the content of  $a$  is present only as the feeling 2 into which  $a$  has subsided. The meaning of  $b$ , then, is to be measured by the number of trains of thought

to which it refers, or by the richness and variety of its emotional accompaniment.

The difference between this view of the function of feeling and certain other views may be brought out by turning to the question of the generalization of feeling or emotion. Thus far we have given no definition of the terms "feeling," "emotion," "mood," or "sentiment," but we have been all the while moving toward the idea that any one of these terms (for our present purpose they are not theoretically distinguishable) is the general aspect, or the class mark, of any and every conscious content with which it may be developed. The question is definitely raised by W. Urban<sup>34</sup> and by T. Elsenhans<sup>35</sup> as to whether there is a process of generalization or abstraction among emotions as there is in case of cognitions: is there a "logic of the emotions," or are there feeling-concepts as there are thought-concepts? Both answer in the affirmative. Urban alludes to Wundt's "conceptual feeling" and cites Meinong and Ehrenfels as follows:

Both Meinong and Ehrenfels have pointed out with considerable subtlety that the phenomena of transference of sentiment and its expansion cannot be explained by mere association of ideas. There is an element of judgment in the process which makes it of the nature of a subsumption.<sup>36</sup>

There is this also from Ribot:

Intellectual complexity involves emotional complexity. If we compare the primary emotions to the simplest perception of sight and hearing, the complex emotions will correspond to the perception of an extensive landscape or a symphony.<sup>37</sup>

Titchener develops this idea when he says:

The feeling stands on the same level of mental development as the perception or idea.<sup>38</sup>

The emotion stands upon the same level of mental development as the simultaneous association of ideas.<sup>39</sup>

The mood stands upon the same level of mental development as the train of ideas.<sup>40</sup>

<sup>34</sup>*Psychological Review*, Vol. VIII, p. 262, "The Problem of a Logic of the Emotions."

<sup>35</sup>*Ueber Verallgemeinerung der Gefühle*, noted in *Psychological Review*, Vol. VIII, p. 310.

<sup>36</sup>*Op. cit.*, p. 265.

<sup>37</sup>*Psychology of the Emotions*, sec. 3, chap. 7.

<sup>38</sup>*An Outline of Psychology*, chap. 9, p. 214.

<sup>39</sup>*Ibid.*, p. 219.

<sup>40</sup>*Ibid.*, p. 233.

The objection I raise to all these formulations is this, that they seem to treat the emotional processes as co-ordinate with and analogous to the cognitive, whereas, feeling and thought being highly antithetical, it is against all experience to expect them to behave in like ways. It seems to me that the truth, which such discussions as these referred to have brought out, may be as fully covered and better explained by saying, not that we have abstract emotions like concepts, but that the abstract or conceptual element of any psychosis is an emotion. Now, if we wish a differential statement for feeling, emotion, mood, sentiment, we may name them concrete or abstract, simple or complex, according to the cognitive status of the two extremes between which they mediate. Thus a feeling is the continuum between two simple sense-qualities like blue and green, but a mood or sentiment the continuum between, say, the color of the sky and the poem which we have been reading. But, as above stated, that difference in feeling emotion, sentiment, and what not is not at all indicative of any difference in their function or essential nature; it may be used merely as a descriptive convenience.

To bring out more clearly the emotional nature of the concept: A concept, we may say, is an image which functions for more than one situation, or it is the principle of identity between two or more different things—it is generic. As a concept becomes more generalized and abstract—*i. e.*, as it increases in extension—its image becomes more purely symbolical, and the number of qualities for which it stands grows less. The number of qualities decreases, but not the fact of quality, so that, as we approach nearer and nearer to the supreme genus, the conceptual content is coming nearer and nearer to a single pure quality—a quality with the minimum of differentiation, but with a maximum of extension or denotation; a simple quality which has a strength of designation or “thereness;” a vivid insistence *that* something exists without any suggestion as to *what* it is. And this we recognize as the precise character of feeling or emotion. The conceptual consciousness, then, would be quite a different thing from the perceptual or attentive consciousness. If the criterion of attention be clearness of mental content, and if we define clearness as “amount of objective detail,” then it is obvious that the conceptual consciousness is more germane to the emotional than to the intellectual aspect of psychic activity. Our apprehension by concept is an implicit apprehension; when we say



"animal," we are not aware of every animal we ever saw, but we have a feeling of possibilities which could find adequate expression only in a long series of images. As Angell puts it:

There is often present, as a highly important accompaniment, a definite (quasi-affective) attitude of familiarity with the word, and a feeling of placid conviction that at any moment the explicit associates which give it meaning could, if necessary, be summoned before us.<sup>41</sup>

What we immediately have is an emotional state—an appreciation without perfect discrimination. The concept is, in terms of the former discussion,  $a\text{-----}x\text{-----}b$ , the midpoint in the continuum between  $a$  and  $b$ ; it is the common ground or the abstraction of the generic element in them.<sup>42</sup>

Coming now to our restatement of value from the standpoint of discrimination, we must say that the condition of the emergence of meaning and of our apprehension of it is the continuity of consciousness. We cannot have two foci of thought at the same time, but an emotion and a thought, the focus and its fringe, can be in the mind at the same time. It is this fact, and the fact that the emotion represents or functions vicariously for other absent thoughts, which make possible all substitution or symbolism. Meaning depends upon the possibility of making one thing, an emotion, stand for other things, thoughts, *i. e.*, on the possibility of using symbols. We are accustomed to recognize that progress or improved self-control is conditioned by our ability to use symbols for experience—by our ability to condense past experiences into meanings which are carried along in consciousness as feelings, and ability to speculate

<sup>41</sup>*Philosophical Review*, Vol. VI, p. 649.

<sup>42</sup>This view of the concept as emotional is not unlike the logical status accorded the concept by J. H. MUIRHEAD in "The Place of the Concept in Logical Doctrine," *Mind*, N. S., Vol. V, pp. 515, 521. He says: "We say we have a 'notion' of a thing though we cannot describe it, that it is undescribable or (after we have heard it described) that we have a better notion of it than before. . . . What popular language calls notions, I should propose, following Hegel, to call 'concept.' . . . According to the traditional use the concept is the group of predicates by which we have defined a thing. The concept of gold is hard, yellow, bright, untarnishable metal. According to the use here suggested, it is just the opposite; it is the element in our consciousness of the thing which is not yet defined by any predicates but remains over after we have done our best, as an unmanageable surd." And further: "The concept for which I contend is a region of experience into which identity and difference (and therefore judgment) have not yet penetrated."

by signs upon future events. The anticipatory excitement which we call volition is constituted by our preconceptions of what our experience is going to be, and this foresight of the "sort" of experience we are to have is a conceptual readiness for it, largely emotional in its nature. Or, to put the same thing in another way, the final act of choice in a complex situation is obviously the final merging of all efforts into one particular possibility of action; it is a classification of our experience under one genus—a kind of handing it over to some one symbol which is to represent it all.

A practical illustration of this vicarious functioning of the emotion is to be found in the superior effectiveness of the so-called intuitional method of arriving at conclusions. The "emotional method" of approaching a subject is like the artist's procedure in painting his picture. He does not begin on some one detail, finish that, and then go on to another, but he blocks out the whole picture with rough masses of color and then elaborates the ground-work into the finished product. In a like manner, the apprehension of a situation takes first the form of vague masses of feeling, which, if we persist, may become a finished perception of details. Emotional proficiency consists in a sensibility to fine shades of experience, together with a propensity for translating all situations into emotional terms; it means, in other words, a rapid tendency toward assimilation and toward automatisms. This is the type of response which Professor James, with unintended gallantry, calls the "feminine method of direct intuition."<sup>43</sup> If it be true that women are more deeply and more delicately emotional than men, then it must be allowed that the woman has one immense advantage in intellectual equipment. Her emotional responsiveness means that she is quicker in perception and more rapid in adjustment, just because she is a readier symbolist—willing to take a vague impression as final, if it will serve the purpose. Professor James approves of intuition as a social and domestic convenience, but he appears to believe that if the woman would be truly intellectual, she must resort to the lumbering ponderosity of the "masculine method": "Behemoth prescribing rules of locomotion to the swan!"

The fact is that the ability to deal with a situation in emotional terms is not limited by sex nor is it a thing which functions only occasionally and in a few special circumstances; but it is rather

<sup>43</sup>*Psychology*, Vol. II, pp. 368, 369.

the type of response which all intelligence must aim at, and must attain if there is to be such a thing as progress. As James says in his next paragraph: "The first effect on the mind of growing cultivated is that processes once multiple get to be performed by a single act."<sup>44</sup>

<sup>44</sup>*Ibid.*, p. 369.



### III. MEANING AS DEVELOPED IN REPRESENTATION

Directly in line with the last point made—namely, that self-control or conscious progress depends upon ability to use symbols—comes the conception that the fundamental nature of consciousness is exemplified in its imitative or iterative function, in its aspect as self-representative series or system. Imitation is defined as “any repetition in thought, action, or both, which reinstates a copy. . . . It includes what is called ‘self-imitation,’ or repetition of what is in one’s own mind. . . . This usage is that of Tarde, James, Royce, Baldwin.”<sup>45</sup> The basal importance of this concept to Professor Baldwin’s mind is signalized by the position given it in *Mental Development in the Child and in the Race*. As further indicative of the fundamental character of imitation we may quote Professor Royce’s words:

An imitative act appears to me to be not so much an act that, in Professor Baldwin’s phrase, tends to repeat its own stimulus, as an act that tends to reinforce, emphasize, signalize, clarify its complex stimulus by adding thereto other and parallel series of internal or organic stimuli, which by their similarity as a series shall support, while by their differences they shall in general supplement, the stimulus in question. . . . Imitation and model are contrasted series of presentations whose relation keeps them apart. And hence it is that, as I myself suppose imitation is, psychologically speaking, the one source of our whole series of conscious distinctions between subject and object, thought and truth, deed and ideal, impulse and conscience, inner world and external world—in short, of all those familiar and fundamental rational distinctions which psychology has hitherto found so baffling.”<sup>46</sup>

“The effect of imitation,” says Baldwin, “is to make the brain a ‘repeating organ,’ and the muscular system is the expression and evidence of this fact.”<sup>47</sup> But the difficulty with insisting too strongly upon the merely iterative aspect of imitation, with taking it too literally as a circular activity or a reinstatement of a copy, is just this, that, taking imitation as a fundamental act, we shall get into a vortex of perpetual motion; we must conceive ourselves as repeating our responses and exercising our muscular system forevermore.

<sup>45</sup>*Dictionary of Philosophy*, “Imitation,” definition (2).

<sup>46</sup>*Psychological Review*, Vol. II, pp. 229, 230.

<sup>47</sup>*Mind*, N. S., Vol. III, p. 26.

In other words, if it is enough for the imitative act that it imitates, we have then no statement of the incentive nor of the check to activity, nothing to start or to stop the process. The same point obtains against Professor Royce's attempt (to be noticed later) to develop an "infinite multitude out of the expression of a single purpose." It is perfectly true that many of our purposes do seem to involve an indefinite number of imitative reinstatements. The desire to play a musical composition well means a long series of practice performances; the wish to remember every detail of a picture involves many renewals and repetitions of the stimulus; and the purpose of accurate measurement calls for the performance of the act of measurement to be done over and over again; the probability being that the greater the number of such results there are averaged together, the nearer true the last result will be. Our formula for reassuring ourselves or other people of the correctness of our information is: "I know that I know." In all these cases, however, if we assume that our purpose is to get absolute knowledge, perfect certainty, or complete accuracy, we shall become involved in an infinite series; we must go on saying, "I know that I know that I know" *ad infinitum*; must keep on forever with our verifications and take measurements to all eternity. The problem is to find something in the self-representative process which shall check the infinite series and permit practical activities.

Royce's definition of imitation, as quoted above, seems to promise such a check in so far as it permits the response to vary the stimulus; but this variation is not developed by Royce as a definite limit to the process; its inhibitory significance is not dwelt upon. The conception of imitation as a reaction which "reinforces, emphasizes, signalizes, and clarifies" its stimulus makes that process cover any case of attentive or accommodatory response whatsoever; the imitative act becomes the acknowledgment and acceptance of a stimulus. But here the question rephrases itself: Is there to be a non-selective imitation of anything that offers, an indiscriminate acceptance of every stimulus? This is the doubtful point in presentational theories of knowledge: if the validity of our idea rests upon its literal portrayal of an outside reality; if the imitation is to be of such a sort that we should always prefer the original if we could get it; if, in short, the criterion lies outside the subject, then one model is as good as another for that subject, and it is perfectly comprehensible that one should go

on copying one model or reiterating one idea without end. An external criterion affords no internal limits. The conception to be avoided is that everything given is necessarily accepted. If we take the object of representation or reinstatement to be a literal qualitative reproduction, we are ignoring the fact that in many cases the response to a stimulus is the effort to avert it, and that we desire anything but a reinstatement. We may even say that in practically all cases the response involves a wish for some change in the stimulus. If this were not so—if the stimulus as present were agreeable enough—why respond? When we wish for a thing that has been given and then withdrawn, it is the withdrawal which is the irritant to action. I should say that in most, if not all, cases it is the dissatisfaction with the stimulus which is the occasion of the reaction and upon which depends the emergence of representation and value. The tendency toward pure repetition of one's stimulus implies that mere self-maintenance or self-consciousness as such is desirable, that all stimulation is agreeable; it is not self-consciousness of any sort that we are usually seeking, but self-consciousness controlled. Self-control demands that there be a vigorous want of some kind (in practical life those people are most unmanageable whose wants are hardest to discover), and value depends in large measure upon aversion. It is only when a mental content is discriminated away from something else, when it stands in place of something different, when it permits us to change or avoid something in the original situation, that the content has any point or meaning as a representation.

To bring this out we may consider as possible two conceptions of representation, or two types of substitution. In the first instance, one may be supposed to aim at a perfect identity in the contents of the model and the copy—a case which might occur, if anywhere, in respect to pure pleasure. The form of substitution here would be the form which could obtain between the different “parts” of a homogeneous whole. Jevons gives<sup>48</sup> the example of a small bit of cloth being used as a sample of the whole piece. One part is as good as any other part for immediate experience. The logical expression for the entire system of internal relations is just the law of identity  $A = A$ . With such an interpretation representation amounts to nothing but a vain repetition, or rather to a continuous

<sup>48</sup>*Principles of Science*, chap. 1, p. 9.

affective state, an approach to hypnotic trance, a qualitatively identical content in which the possibility of repetition or variation is purely nominal—an external and arbitrary numerical difference. In the other type of representation we substitute one thing in place of another which may be quite different for immediate experience—as when a red light signifies danger. It is this kind of representation which is apparent in all practical activities: in artistic production it is the ability to present old material in new forms which makes the picture of any worth; in the economic world it is the possibility of using alternatives—of getting different machinery, using other lands or commodities, employing labor under different contracts—which breaks up the rigidity of industrial methods and allows progress; in all inventive or constructive thought the mode of working is precisely this testing of alternatives. In this second type of representation we are concerned to find, not simple identities, but the statement of equivalencies in which identities appear amid ever-widening diversities. The representative must be not a sample, but a symbol. The possibility of such vicarious functioning rests upon the fact that one has some end in view; one thing can be used for another only in certain respects, is as good as another only for specific purposes. Speaking generally, the greater the discrepancy between sign and the thing signified, the more special and limited does the purpose appear to be. To say that glass is equal to wood is quite unintelligible apart from the purpose of some mechanical construction in which the one may perform the same function as the other; the glass is a symbol of a certain thing to be done. This second kind of representation may be called functional, in contrast with the first which was a structural or sensorial kind of reinstatement. The second kind, which aims merely to continue the effect of the stimulus, includes, therefore, all the desirable types of response to the stimulus. Among these we may mention three important cases to which the accurate structural reinstatement does not do justice: (1) It is frequently desired to reproduce the stimulus in an enlarged and embellished form, and here the imitator wishes to include everything in the original situation, but also to add to it. (2) It is sometimes convenient to reinstate the stimulus only in brief; we wish the essentials, but we must have them in telegraphic form. (3) Finally we have the case in which we take note of the stimulus only to guard against it, and here our object is to prevent any

structural imitation at all, but we represent the stimulus in the series of averting movements which it determines.

In Professor Royce's example of a thought which develops its own diversity we find the conception of "the development of an Infinite Multitude out of the Expression of a Single Purpose."<sup>49</sup> We are told in the example to imagine someone drawing a perfect map of England upon English soil:

One who, with absolute exactness of perception, looked down upon the ideal map thus constructed, would see lying upon the surface of England, and at a definite place thereon, a representation of England on as large or as small a scale as you please. This representation would agree in content with the real England, but at a place within this map of England, there would appear, upon a small scale, a new representation, which would repeat in the outer portions the details of the former, but upon a smaller space, would be seen to contain yet another England, and this another, and so on without limit.

Without attempting to say anything about the logical or metaphysical merits of the case, let us see what the psychological implications must be in such an expression of a purpose. The conception of representation as a statement of equivalencies—not of pure identities—in the fulfilment of a purpose ought to be the check which will prevent such representation from becoming an infinite series. As Royce says: "This series, if real, is inexhaustible by any process of successive procedure, whereby one passes from one member to the next."<sup>50</sup> But this must be just the standpoint which psychology takes, namely, that for the experiencing individual the fulfilment of a purpose is a "process of successive procedure, whereby one passes from one member to the next." The very nature of purpose is of something being completed in time. If we conceive of the infinite series of maps as being complete all at the same instant, then there is no room for the idea of progress or of purpose—it is all there, with nothing to be done. If, however, we suppose one map to be made after another, then the process must continue forever; and in this case we should have no progress at all in representation, inasmuch as there would never be any completed copy to represent; *i. e.*, the first map would not be perfect until the last one was done, and besides every stroke of the pencil would leave as much more thereby to be copied as itself had just succeeded in

<sup>49</sup>*The World and the Individual*, Supplementary Essay, pp. 502 ff.

<sup>50</sup>*Ibid.*, p. 581.



copying, and we should not be approaching an end at all. A purpose, in other words, presupposes a diminishing task ahead of it. Our ability to inhibit this infinite process, to get a purpose finally expressed, or to stop somewhere is conditioned by the existence of some counter-impulse, by the fact that we already have some object or last term in view. Psychologically, therefore, we never should have a purpose expressed as in Royce's illustration. In the example as given we have one unique member in the infinite series—the first one; every member of the series has the double character of imitation and model, of copying and being copied; but the first one is unique in that it does not copy a copy, but represents England itself—copies a "reality." But in any real purpose we must have, not only a unique beginning, but also a unique end; we demand a second limit, or a term which shall be only a copy and not itself a model. To put it in a different way, nobody would ever start out to make a "perfect" map without knowing what it was to be perfect for. We never seek undifferentiated perfection. Value could never emerge in the course of the infinite series, because the whole of life would be given in that process, and the end of action must be thought of as eternally attained or as eternally unattainable, and never in actual process of attainment.

The only infinite aspect of a conscious purpose is the infinite possibility of differentiation, the unlimited variety of choice of means, which is suggested in the emotional stage prior to the articulation of the judgment or purpose. The apprehension of infinity is (to the mind innocent of mathematics) an experience in which the consciousness of quality is uppermost. Infinity is for consciousness another name for continuity; it means infinite possibilities, but not actualities. The only way, then, in which thought can develop its own diversity is not by trying to continue the infinite multitude, but by checking it. In one sense the infinite multitude, or the relational continuum, is given in feeling, and it is the trick of thought to find out the terms of the relation and to limit by one actual performance the infinite possibilities of performance.

To define representation once more, then, we may quote again from Royce:

A thinking process of the type here in question [a recurrent operation of thought] recreates, although in a new instance, the very kind of ideal object that, by means of its process, it proposed to alter into some more acceptable form.<sup>51</sup>

<sup>51</sup>*World and Individual*, p. 495.

And on a previous page:

Necessary to the relations of correspondence is only this, that you shall be able to view the two corresponding objects together, in a one-to-one relation, or in some other definite way, and, with some single purpose in mind, shall then be able in some one perhaps very limited aspect to affirm of one of them the same that you at the same time and in the same limited sense, affirm of the other. In consequence, with reference to this one affirmation, you could in some specified wise substitute one of them for the other, whole for whole, part for part, element for element.<sup>52</sup>

It is its character as substitute which constitutes for a conscious content its objective reference and its meaning. The phrase "objective reference" may appear to be susceptible of two different interpretations corresponding to the two above-mentioned types of imitation. In the Lockian type of theory, knowledge seems to be a faint copying of some outside system of real things, the mind is "impressed" by its environment, and the validity of its ideas is conditioned by their close delineation, their point-for-point appeal to those real things, by their success in importing something external into the knowledge-process. The other sort of theory would say that the "objective reference" of a mental content is its facilitation of a purpose, every point in the image being the stimulus to some part of the total activity. The more strenuous our desires, the more complicated and inclusive our purpose, the more distinctly valuable is each representative, each symbol, which keeps that interest summed up and presented before us. These two views appear to be different, for the reason that the former has usually been held to imply that the object is prior to experience, whereas in the latter view the object is regarded as in no wise given to experience, but as the thing to be attained by it. But the two modes of expression seem to be reconciled when we recognize that the faithful mirroring of anything need not mean that we see something beyond our own consciousness; but it may mean that we steadily contemplate a situation with a future reference in mind, that certain impressions dominate our thoughts, but that their objective or control value lies in the fact that they are possible parts of our future experience. The difference in the two views is expressed by Professor Moore as follows:

But now comes the question with which passive empiricism, sensational and rational, has so much difficulty; viz., the question of a standard for this

<sup>52</sup>*Ibid.*, p. 302.

completeness. If further sensation keeps on giving more reality and this stimulates further reconstruction of ideas, at what point is verification reached?<sup>53</sup>

This question is answered by the theory which says that the ideal construction is not called upon to copy or even represent something given in sensation, because nothing is here given in sensation but the demand for re-coördination. The new ideal construction is trying to "agree with sensation," not in the sense of reproducing something *appearing* in it, but in the sense of responding to the demand for reorganization. Hence the idea runs no risk in advance of being false to the reality which appears in sensation, because the only reality appearing there is this demand for reorganization.<sup>54</sup>

A mental content, then, has objective reference, it is representative or has meaning, because it comes as the fulfilment of desire, it presupposes a need—a limit from which—and is itself the limit toward which we move—it answers a demand.

<sup>53</sup>*The Functional versus the Representational Theories of Knowledge in Locke's Essay*, p. 53.

<sup>54</sup>*Ibid.*, p. 57.

#### IV. MEANING UNDER THE EXPERIMENTAL METHOD

I wish to make two points in this discussion: first, that experimental procedure is an expression of all which is essential in any form of thinking, and that the experiment is therefore the one pre-eminent method of psychology; and, second, that the conduct of the experiment gives us the final and most explicit setting for such a statement of value as that indicated in the preceding pages.

"*Experiment*," Wundt says, "is observation connected with an intentional interference on the part of the observer, in the rise and course of the phenomena observed."<sup>55</sup> A broader conception is formulated by Professor Cattell: "Common usage," he says, "would call an observation made under artificial conditions, as with instruments, an experiment."<sup>56</sup> And he accordingly defines experiment as "the alteration of phenomena or of the methods of observing phenomena, in order to obtain knowledge regarding them." If we agree, then, that the experiment is observation under conditions of control, or is experience artificially varied, let us ask what is the range of application to psychic phenomena which this generally accepted definition allows. It is time to protest, I think, against the narrow limits and the insignificant rôle which are frequently assigned to the experiment in the development of psychological concepts and explanations. As against Sigwart, who says that "the experimental methods, however much they may contribute to accuracy and precision, can yet have only a subordinate importance in this department (*i. e.*, Psychology). They can never give us more than fragments. . . ." <sup>57</sup>—Mill and others concurring—I should say that, as Wundt maintains, there is no psychic process, however complex, to which it is not applicable, and that all acquirement of knowledge is bound to come by a process which may with reason be described as an essentially experimental process. Illustrative of an indifference toward psychological method in general we find in Ladd:

In spite of much debate over psychological method, we cannot consider

<sup>55</sup>*Outlines of Psychology*, Introduction, par. 3, p. 19.

<sup>56</sup>*Philosophical Dictionary*, art. "Experiment."

<sup>57</sup>*Logic* (DENDY), Vol. II, p. 406.

this question as worthy of detailed consideration. Indeed, we can scarcely speak with propriety of *the* method in psychology. All means to a more accurate and complete description of conscious states, and to the fuller and more precise knowledge of their external conditions and their interconnections, belong to legitimate psychological method.<sup>58</sup>

This is, of course, very true, only what we want to know is not so much whether we are at liberty to use "all means" in our power, as whether we can discover in those means anything which is essential and common to them all or anything relevant to psychology itself. It is sometimes said that it is not the business of a science to criticise its tools or to investigate the assumptions on which it starts; but it seems to me that in a sense that may be said to be the whole business of a science. It must start somewhere, and it is this particular "where" which characterizes the science; the use to which it can put those tools, or the whole superstructure upon the original subsumption is the immanent criticism of the original, accepted categories or tools. What the most general concept of psychology is, or what its principal method of explanation, are identical questions with, What is our one great avenue of psychological information? It seems to me that there is some community among the various psychological methods, and that the concept of the experiment is the general form of it; and, further, that in psychological treatises the question of the ultimate psychological concept ought to be no mere preliminary flourish, but a matter quite worthy of detailed consideration.

Under the definition of experiment, as given above, we may conceive that in every moment of self-awareness, however vague, there is implicit the germ of experimental procedure. It has become common to recommend to our notice the blindness and fatuity of those who suppose that they shall be able to see without hypotheses and preconceptions to see with, and to point to the ineptitude, or indeed the impossibility, of random, unorganized observation. This is equal to the acknowledgment that in all observation (for psychological science this means introspection or internal observation) there is some degree of preparation or of supervision. Jevons says: "It may readily be seen that we pass upward by insensible gradations from pure observation to determinate experiment."<sup>59</sup> That is to say, we pass from introspection — the most uncontrolled, capricious,

<sup>58</sup>*Outlines of Descriptive Psychology*, chap. 1, p. 10.

<sup>59</sup>*Principles of Science*, p. 400.



subjective—to experiment, the most determined and precisely checked source of information. We have said in another connection that all consciousness is, to some extent, self-consciousness, and we may say here that all consciousness is, to some extent, controlled; no mental state is absolutely devoid of the strictures of self-awareness and of preparatory tensions. Introspection, which is another name for self-consciousness or internal observation, is said to modify profoundly the conscious contents of which it purposes to give an unbiased report; but I should deny that any such contents exist until they are known, and should say that the only distortion which introspection performs is to raise the subconscious into conscious states. A similar answer, also, may be made to the precisely analogous criticism often raised against the psychological experiment, namely, that the experiment shows in a highly artificial light that which it purports to illuminate, inasmuch as laboratory conditions are not normal conditions and the process isolated in the experiment is found normally involved in very complex relations. Scripture says:

In general, we may say that the act of observing introduces a change in the sum total of experience; the more intentionally and systematically we observe, or the more carefully we experiment and measure, the greater the distortion and change produced.<sup>60</sup>

We should certainly agree that the experiment is a distortion in the sense that it is not an exact copy of anything, but should deny that that is an objection. There has been a change in experience, of course, but that was exactly what we were aiming at; it is a change from the vague to the analyzed, the implicit to the explicit. The object of all reflection, introspection, or scientific endeavor is to isolate and abstract, to analyze the phenomenon under question. The experimentalist does not say that what is true of a phenomenon in isolation is true of it in complication with all other phenomena, but what he attempts to do is to lift the confused complications of everyday life into clearly differentiated complications, taking up one phase at a time, in the hope to get finally a statement of all the "valid possibilities of experience" connected with the problem he has chosen. The experiment is experience, then, in "definite, coherent, heterogeneous" form. The difference between introspection and experimental method is like the difference between savagery and civilization. Eighteenth-century writers were prone to think

<sup>60</sup>*The New Psychology*, p. 11.

that civilization consisted in the presence of a multitude of external contrivances and mechanisms which wasted man's energies without giving him any real rewards—a condition to which the noble simplicity of man's aboriginal estate seemed highly preferable. But we have come to believe that, although the difference between the savage and civilized community may be symbolized by this wealth of external paraphernalia, these media are but the outward and visible signs which point to the inward and spiritual grace of many a precise and delicate adjustment. The watches and chronoscopes, the railroads and telegraphs, stand for an increase in the possibilities of regularity and exactness, and hence of diversity and of advancement. The experiment intelligently planned is not an inconsequential plaything, giving at best a few trivial measurements which are of merely passing and curious value; but it is the expression best available of all the conditions of an adequate observation. The experiment is clarified experience. The criterion of the experiment is not the amount of physical mechanism which it involves (although I should hesitate to say that there could be any control which was perfectly free of reference to physical media), but it is the degree of foresight and of provision made for the outcome.

Relevant to the fundamental significance of experimental method are the words of Bacon:

Nec manus nuda nec intellectus sibi permissus multum valet; instrumentis et auxiliis res perficitur; quibus opus est non minus ad intellectum quam ad manum. Atque ut instrumenta manus motum aut cient aut regunt ita et instrumenta mentis intellectui aut suggerunt aut cavent.<sup>61</sup>

The following also from Scripture:

This principle can be summed up as a deep distrust of man's mind when left to itself, but a firm belief in its reliability when working in true comradeship with carefully determined facts.<sup>62</sup>

And finally, Wundt's standpoint, that only the experimental method is applicable to the facts of individual psychology, because those facts are processes and not permanent objects, and that this method is feasible throughout, there being no phases of consciousness with which it cannot cope.<sup>63</sup>

In order to insist more in detail upon the adequacy of the experi-

<sup>61</sup>*Novum Organum*, Part II, Aphorism 2.

<sup>62</sup>*Op. cit.*, chap. 1, p. 2.

<sup>63</sup>*Outlines of Psychology*, Introduction, sec. 3.

ment to serve as a fundamental category, let us see whether it can be made to harmonize the requirements set by the three preceding conceptions of method. For the present, we will keep to the case in which the experimenter is his own subject. It is obvious at once that in such an instance as, say, a reaction experiment there are present all the *differentiæ* of the volitional process. There is in the planning and arranging of the mode of procedure an elaborate and detailed anticipation of the experimenter's own reaction experience (the experiment, as I take it, includes the whole process, from the first inchoate projection of a plan to the complete setting up of the apparatus and the final discharge or the observation for which the scheme was planned). The elimination of possible interferences and all the precautions which provide for the greatest concentration of attention — *e. g.*, the warning bells immediately before the stimulus is given — assist in the ideational preparation for the act. The reversal in direction, which is characteristic of the voluntary as against involuntary discharge, is presented here in the fact that the whole plan of the experiment has been guided by the nature of the final act to be observed. That final term has been the object toward which all the details have pointed, and the preparation of the details and the conditions has been an elaboration of a scheme of self-stimulation, a definite working out of intention, which we have seen to be the essential nature of foresight. Every true experiment is undertaken in answer to some definite question, takes rise in some necessity; it stands, therefore, as the expression of a purpose in which the reaction of the subject as an analyzed, isolated, clarified expression marks the final step or the goal. Conversely, also, any experiment undertaken without definite purpose or systematic forethought runs every risk of proving futile and meaningless.

In terms of the discriminative process we should recognize that the experiment is an attempt to provide for the detection of finer shades of experience or narrower limits for the continuum of feeling; for instance, in discrimination within the blue-green series the object of the experiment is so to arrange experience that points which have hitherto been undifferentiated within that continuum shall themselves become the limits. In order at this point to bring the volitional and discriminative statements a little more closely together, it should be pointed out that the physiological occasion of every discrimination is the clash of two or more reflexes. In the



color experience, where two shades very nearly alike are presented, the habit of seeing things blue and the habit of seeing things green try each to appropriate the whole experience; so that we get first the one-term emotional state of blue-green in which we cannot say which thing is blue and which green, but in which we nevertheless have the emotional nucleus of the new discriminative adjustment. At length the two definite limits emerge; this one is blue and that one green; *i. e.*, we have a complete perception of the two habits adjusted in a new relation—as limiting a narrower continuum. In a more complex situation we would say that every such limit is a point in the rearranged plan of action—a member, element, or stimulus in the intention or completed scheme of discharge.

Experimentation is representative in the sense that it is a questioning, an examination, or an analysis of the stimulus; it is a reinstatement of the stimulus (*i. e.*, of the first, inadequate, confused experience) in emphasized and distinguished form. The experiment effects this reinstatement of original stimuli in that it symbolizes all our feeling, conjecture, and past experience upon the matter in hand. If our purpose is concerned with a tone-experience, then we must bear in mind all the conditions which we have reason to suppose are relative to tone-experience. As Jevons says: "The great method of experiment consists in removing, one at a time, each of those conditions which may be imagined to have an influence on the result."<sup>64</sup> In eliminating fatigue, practice, and distraction, and in keeping constant the timbre, pitch, intensity, or locality of the sound, as the case demands, we are effecting a functional reinstatement of our past experience. The experiment, to be reliable, should stand as a complete summary or symbol of all our information upon that subject. The experiment always has an objective reference, not as a literal copy, but as a symbol of ordinary experience. The perfectly equipped laboratory would present a one-to-one correspondence with the totality of human events; it would stand for the possibility of reproducing in some symbolized form or other every conscious process in the world. To try to imagine the actual performance of such exhaustive experimentation, however, would be to involve ourselves again in an infinite series. It could never be our object to submit the whole of experience to experimental procedure, any more than it could be our purpose ever to draw a map of Eng-

<sup>64</sup>*Principles of Science*, p. 417.

land which should be perfect in general or absolutely perfect. The experiment is significant, because it answers a definite need and is undertaken for some specific, concrete purpose.

That aspect of the experiment which gives it a peculiar prestige in modern estimation is the objective validity with which it invests the subjective experience of an individual. It is the central achievement of modern, as contrasted with ancient, thought that it can give to the subjective individual such an independent or objective status that he may become the instrument of progress to the community. Through the freedom of the individual, society becomes self-regenerative, provides for its own reform. The existence of individual psychology as a science, the value accorded to particular subjective experience, is one piece of evidence to that fact. The experiment has become for the modern world what the syllogism was for ancient and mediæval speculation—the one organ of knowledge in which an almost unlimited confidence is to be placed. The attainment, therefore, of psychology to the experimental stage is the final step which gives its results a full objective cogency. It is sometimes felt that the comparative method in psychology and the objective method (*i. e.*, the method concerned with investigation of the historic crystallizations of mind<sup>65</sup> in institutions, language, art, religion, etc.) enjoy the special distinction of giving to psychology a more impersonal standpoint and a more objective criterion of mind, because they seem to deal with a more permanent and fixed subject-matter. But this does not in reality distinguish them from the experimental method; they are rather an extension of that method into special fields.

We used above, for the sake of simplicity, the case in which the experimenter served as his own subject. I think it can be shown now that the nature of the experiment is not essentially different whether the operator uses himself or another person as his subject, and, further, that this latter possibility—*i. e.*, the possibility of two persons co-operating in the same thought—is the guarantee of the objectivity of the method. For the first point, then, when the operator is laying out a plan in which he is to be his own subject, he views himself in an impersonal way as a member of a class any one of whom might be the subject; he treats his reacting self as wholly outside his stimulating self, and the reacting

<sup>65</sup> See DEWEY, *Psychology*, chap. 1, p. 11.



self responds as to another person. On the other hand, when the operator works with another person, he must interpret the actions of his subject in terms of his (the operator's) own consciousness, and the subject must appreciate his own reactions from the operator's point of view to the extent that he really understands and follows directions. The record of either of the experiments is then a record valid and objective for all persons; for it may serve both to recall to one person his own former state, and to render possible a like experience in another mind. Its results, in other words, are communicable. If we may state the criterion of the objectivity or the universal validity of a given material to be the possibility which it supports of a division of labor being put upon it—that is, the opportunity which it offers of several minds being consciously employed upon different phases of the same problem—then we may say that the psychological experiment meets the requirement as fully as could be desired.

In Bradley's logic a suggestive comparison is offered between experiment and inference. The point is ably condensed by Bosanquet as follows:

The doctrine which Mr. Bradley founds on his rejection of the syllogism is briefly and roughly this: every inference is a process of construction, followed by a result in the shape of a perception, etc.<sup>66</sup>

And:

I wish to examine the idea conveyed by this comparison of inference, or of a stage in inference, to experiment. Supposal is experiment, as I understand, because (1) it is an operation upon the real, (2) is not yet judgment, but preparatory to judgment, (3) is voluntary, made for a purpose.<sup>67</sup>

Neglecting the very interesting discussion which Bosanquet enters into, I should go on to say that the experiment corresponds, not to the merely preparatory stage of inference, but to the whole process—the preparatory stage plus the final perception or intention. The experiment is *the observation* made under conditions of control. The experiment operates upon the real in that it involves both internal and external changes, and makes intimate use of physical media; it is occupied, as has been said, with construction and preparation for the final judgment, and it is made for a purpose. The experiment, like inference, is voluntary in that we can decide what sort of inference we are going to be concerned about, or what

<sup>66</sup>*Knowledge and Reality*, chap. 6, p. 275.

<sup>67</sup>*Ibid.*, p. 291.

type of experiment we are going to make; we can choose, that is to say, the questions we are going to ask; but experiment, again like inference, cannot choose what result it will get; the perception and the conclusion are forced upon us.

In what form, now, does value emerge in a case of experimental procedure? As we have already hinted, the meaning of the conscious content or modification lies in the amount of preparatory labor which it can command. This preparation of the conditions is the only part of the inferential or inventive process, or of the perception of new relations, which we control. New thoughts "occur" to us, inventions "come," we have flashes of insight, we suddenly "find" ourselves seeing or understanding that which before we had not seen or understood. The last term, final perception, seems to be the given thing; this, then, is the thing to be valued, and it finds its meaning in the attitude of the mind which receives it. This attitude of readiness may be described as the having at hand numerous well-disciplined habits, responsive to slight suggestions, or as facility in classification. It is a mood which means a certain openness to the unknown—a willingness to submit to some amount of irrelevant impression, to harbor a mass of floating detail, so to speak, for the sake of the chances offered—a habit of thought which is literally mental speculation. This readiness for a new determination when it comes may be called the excitement of the apperceiving mass which is to receive the impression. Meaning, within the psychological experiment, lies in the fact that the setting is prepared for the final term. An *experimentum crucis* is defined as "an experiment so arranged that its results will be final or crucial in solving a problem."<sup>68</sup> We may say that every complete experiment aims to be a crucial one, and to have its final term invested with all the significance which the complete solution of a problem gives. The apparatus as it appears to the subject, the directions which he receives from the operator, his preliminary performances, are all to him the methods or means to the object; they are the content to which the new impression or the result finally gives point and direction. Since in the experiment we consciously induce that readiness to receive the final impression, and since we resort to physical symbols with which to do it, we might call the experiment an objectification of the apperceiving mass into which the new thing

<sup>68</sup>BALDWIN'S Dictionary.

must sink. The experimental conditions, as the results of past experience, are constitutive of the element of familiarity or constancy which renders the new thing apprehensible, gives it background. Apart from a knowledge of the conditions under which they are got, the results of an experiment are perfectly worthless, or even untrue. The mere statement of statistics apart from their setting has no more meaning than a sensation stimulus apart from the apperceiving mind.

By way of conclusion to the several preceding ways of expressing self-control and its bearing upon the problem of meaning, we may reiterate the doctrine that the experimental method exhibits in the most adequate and comprehensible form the phenomena of self-control. Experimentation is not constituted by having machines or apparatus about; but when we do find a psychological problem which can be effectively expressed and governed through external, tangible, physical media, we have then found a typical instance of the relation of mind to matter and of how each gives meaning to the other. In the pursuance of any investigation the laboratory surroundings give to the psychic act its local habitation or its setting in external reality. Those particular nails and sticks and screens are part of the means or method of its production; they are its present content or meaning, just as the physical universe in general is the content and meaning, the reference, of our everyday thought. That is the one side, and the other is obvious, namely, that it is the psychic act which gives point or significance to that peculiar aggregate of appliances used in the experiment. The most generalized expression of a completed instance of self-control may be given, in the words of Stout, as "a determination of the whole self by the whole self." In order to arrive at this statement, let us begin by saying that man's greatest satisfaction, and the final end of all his effort, is to give himself adequate or precise expression. When he can reduce his inmost thoughts and airiest fancies to outward, tangible forms, when every modulation of passion has its differential correspondent in some particular turn of the verse, the statue, or the formula (*i. e., in some objective medium which in itself is to him indifferent*), then he has reached a goal. I say that the medium must be indifferent in itself, for if this were not so, it must suggest some further interest or possibility of action, which in

its turn would require further expression. The highest abstractions (involving the most indifferent symbols) in which men do express themselves are perhaps the equations of mathematics. Hence our final ideal of a completed self-control will take the form of an equation of the self with the self. The self is in complete possession of the self, intention is equal to fulfilment, the ideal to the real, self = self, or a perfect determination of the self by the self.

In giving ourselves complete expression our procedure may be called a working out of our permanent possibilities of control, or a reduction of our problems to their solution in fixed reflexes or habits. Of value at large let us say that we find its index in the permanent guarantees of control which we find in the world about us. The civil law is valid because we can rely upon it to secure certain uniform results; the roads and bridges, tables and chairs, which we use have value because they stand for the control of certain reactions, we have well-grounded expectations concerning them. These things do not as they stand constitute our values, for value appears only in the active use of them, but they are our indices. In psychological language the index of values is to be found in the permanent possibilities of control which we call habit or character. The conscious concomitant of character is the recurrent feeling or the dominant emotional tone which pervades one's whole activity. Emotion and character are signs or clues to our meanings, signs which are present as well in every trivial commonplace pursuit as in the great cataclysmic emotions which reflect the larger systems of interest and thought running through our whole lives; but these symbols find their application and reference, their meaning emerges, only amid the strains and stresses of unrealized ideals and ungratified wants — in the still open process of gaining self-control.











**TO →** 2600 Tolman Hall 642-4209

|   |   |   |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |

ALL BOOKS MAY BE RECALLED AFTER 7 DAYS  
2- hour books must be renewed in person  
Return to desk from which borrowed

**DUE AS STAMPED BELOW**

QUARTER LOAN DUE:

JAN 15 1982

~~SUBJECT TO RECALL~~  
00 REC B-1AM

UNIVERSITY OF CALIFORNIA, BERKELEY  
FORM NO. DD10, 5m, 3/80 BERKELEY, CA 94720

U.C. BERKELEY LIBRARIES



C029507143

